THE ARCHITECT & BUILDING NEWS

22 APRIL 1959 VOL. 215 NO. 16 ONE SHILLING WEEKLY

- **SHOPPING CENTRES**
- **INFORMATION DIGEST**

PUBLISHED IN LONDON SINCE 1854

WHERE SIMPLE OR COMPLICATED SCHEMES OF VENTILATION ARE INSTALLED, AND THE OPERATION IS REQUIRED, BY REMOTE CONTROL OR OTHERWISE, AND THE WINDOWS HAVE ANY OF THE FOLLOWING CHARACTERISTICS:—

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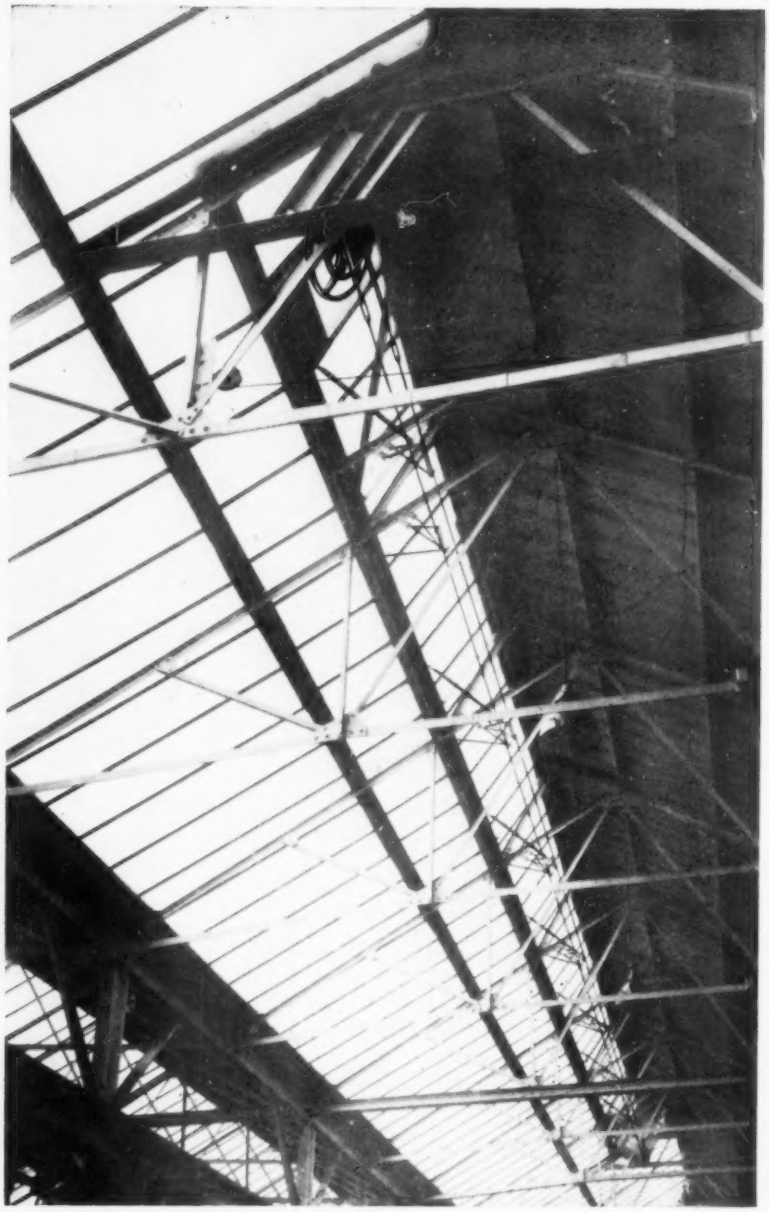
- **OPENING INWARDS**
- **TOP HUNG**
- **HORIZONTAL CENTRE-HUNG**
- **BOTTOM HUNG**
- **VERTICAL PIVOT HUNG**
- **SIDE HUNG**
- **HORIZONTAL SLIDING**
- **VERTICAL SLIDING**



The illustration shows One Set of Electrically operated Twin Tension Rod gear with Counter-Balance Unit operating one continuous opening light 74' 0" long x 5' 0" deep. Note the Spiral Balance Wheel fitted at the end Sprocket.

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with B.S. 2660 Colour Range 101

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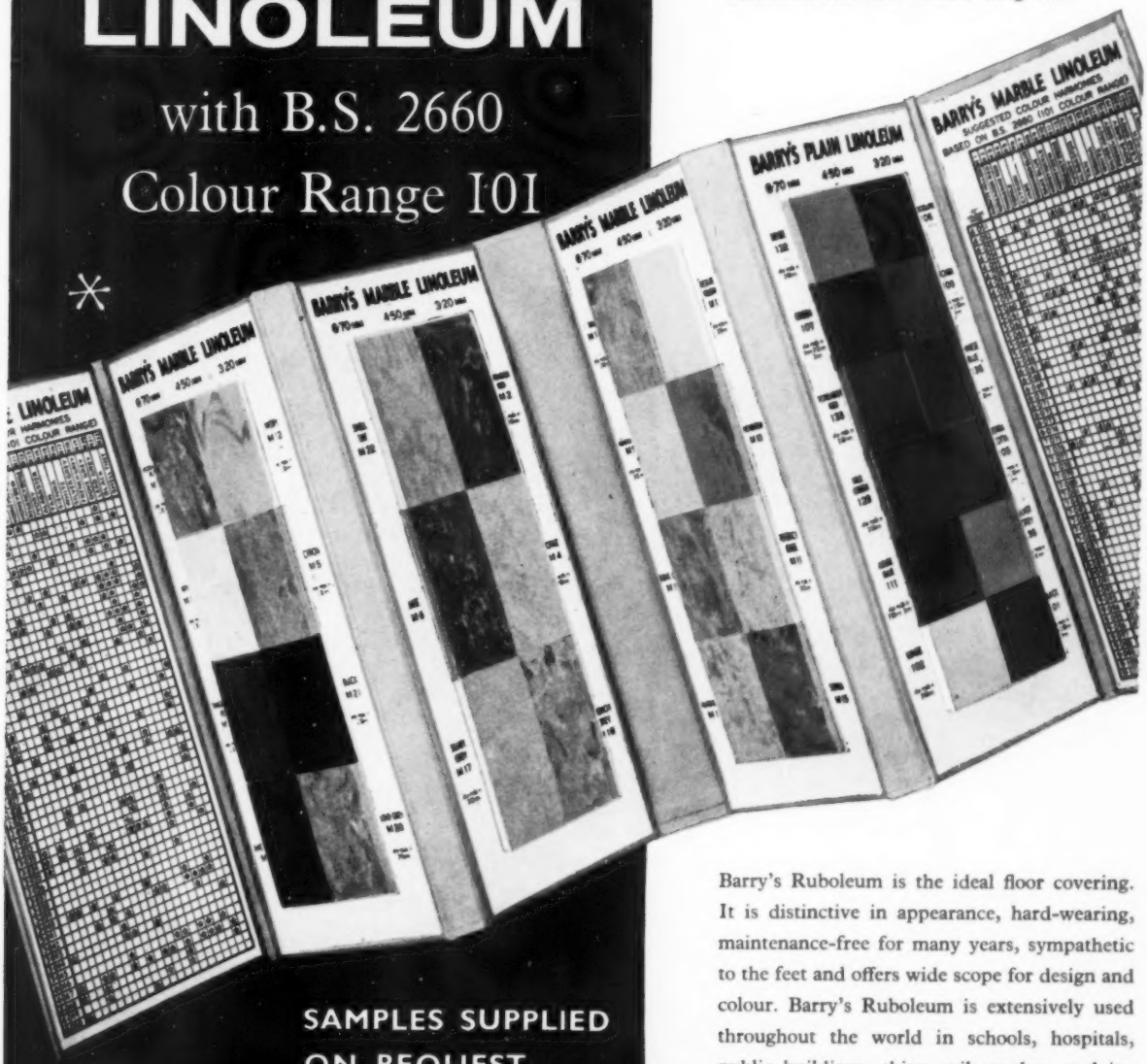

SAMPLES SUPPLIED ON REQUEST

...its a revolution in colour harmonising

Barry's Ruboleum is the ideal floor covering. It is distinctive in appearance, hard-wearing, maintenance-free for many years, sympathetic to the feet and offers wide scope for design and colour. Barry's Ruboleum is extensively used throughout the world in schools, hospitals, public buildings, ships, rail coaches, and industrial premises.

✳ Barry's Ruboleum is obtainable in 2 gauges—6.7 mm., 4.5 mm.

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A

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GLAMOROCK LIMITED announce with pride two truly revolutionary surfacing materials of *natural* stone for floors and also walls. Their names? Glamorock Glaze and Glamorock Granite. Both are beautiful and very hardwearing. Both are *outstandingly economical.*

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Glamorock Glaze possesses all the decorative and wear-resistant advantages of polished granite or Terrazzo, plus a far greater and altogether more attractive range of *natural* stone colours. It is simple to lay and highly economical. Depending on the size of the job, and the locality, its cost works out at between 25/- and 45/- per square yard. Glamorock Glaze is the ideal material for private dwellings, or wherever a modern, very beautiful floor or wall surface is required.

GLAMOROCK GRANITE

Glamorock Granite was evolved to give an exceptional degree of wear-resistance under the most severe conditions, while retaining the beauty, colour and design possibilities of Glamorock Glaze. Glamorock Granite makes a perfect surfacing for factories, schools, hospitals, public buildings and similar places. It is completely slip-proof and after a normal floor polish has been applied it can be thoroughly cleaned simply by water.

Neither Glamorock Glaze nor Glamorock Granite will fade, craze or crack, structural faults excluded. Both surfaces are unaffected by oil, acid and other normally harmful substances. They are easy to keep clean and are comfortable to stand or walk on, maintaining room temperature. And they are both available in a superb range of 22 fade-free colours of the natural rock, without any added pigments whatsoever. These standard colours can be mixed to give an infinite variety of attractive blends.

Both materials (which are supplied ready-mixed) can easily and very rapidly be applied "in situ" on practically any surface—timber, stone, cement, etc.—provided it is free of oil and grease. And they are ideal for prefabrication in tile or sheet form. In either case only a comparatively thin application (say 3/16") is needed.

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Glamorock Glaze used dramatically on a corridor floor and wall. The right hand wall is faced with standard Glamorock.

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loadbearing insulating building blocks

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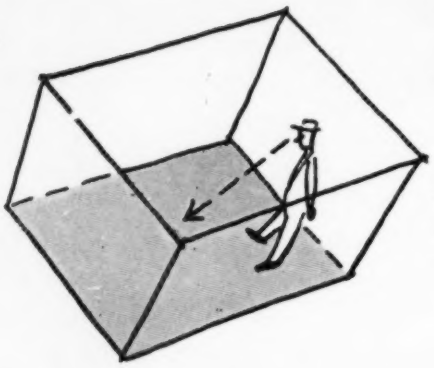


USING LINOLEUM ADVENTUROUSLY

This is the first in a series of articles produced by MICHAEL NAIRN & CO. LTD. *for the information and interest of architects. We asked the designer, James Gardner, for his views on the use of colour and design in linoleum flooring, and we give below his comments and sketches.*

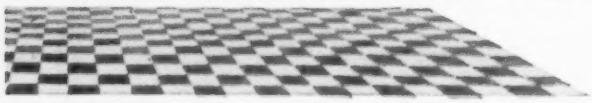
MOST OF OUR LIFE is spent in a box, and so the treatment of the bottom of the box, the floor, deserves some consideration. This is not a new conception when we think of the technical knowledge and effort that must have been involved in producing the Roman tessellated pavements, Persian carpets and the parquetry of the French renaissance.

We should, I think, be somewhat ashamed that we have applied the colours and patterns of modern flooring materials to so little effect, floor surface design usually being treated as a rather unrewarding exercise.

Linoleum, while satisfying the requirement for an easily-cleaned dust-free resilient material, also has an uninterrupted smooth surface. And very often we have miles of it.

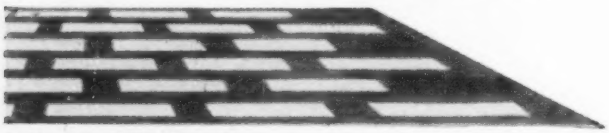
How not to be negative, but to relieve this monotony by actively exploiting colour, tone and pattern to give interest to the large floor-scapes now common in public buildings, office blocks and schools, is the problem. How to set about it?

The unobtrusive and practical tile counterchange, using such quiet and 'safe' colours as Dove Grey and Buff (which is called White in the catalogue) is generally dull and boring and often leads to uncomfortable diagonal perspectives as one sees the tile repeat running off at 45 degrees.

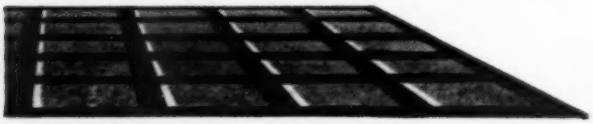


The alternative of applying some novel abstract design, which is usually devised on the drawing board as one would execute a design for a decorated tea tray, results in a floor which relates to nothing that will be standing on it—walls, people or furniture.

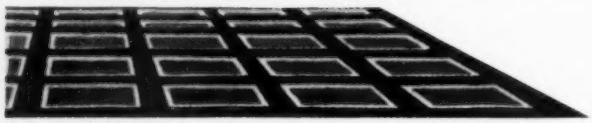
It is obvious that the floor must first be visualized as it will be seen from eye level in relation to walls and ceiling. A decision must then be made on the effect required, the character we wish to give the place.



A *Non-commital and negative*



B *Dignity and efficiency*



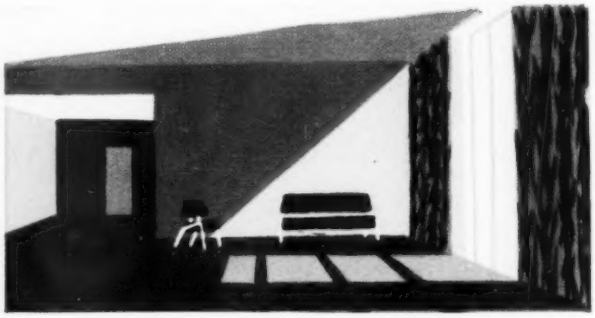
C *Brave, bold and rich*

With a simple tile or strip layout we can, by selection of colours and tones, get an effect of cool uncompromising efficiency, or warmth and richness. Or we can dramatize the area with unexpected and bold tonal changes.

Though not often conscious of the fact, people all the time react emotionally to the colour and space shapes around them, and so whether the architect considers the matter seriously or not, he will be producing an atmosphere—even maybe a negative one.

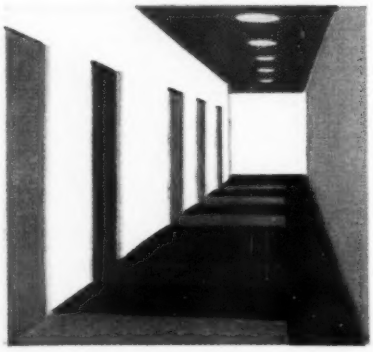
We must consider whether people are to feel welcome, select a spot to sit and rest for a moment, or whether they are here for a long time—perhaps eight hours a day for the rest of their lives. Are they to be impressed during a short consultation, or are they just passing through?

To visualize floor treatments in general terms is not very fruitful, as every floorspace sets a special problem. It is in designing to such limitations that ideas develop, and these sketches are intended to suggest an approach to the problem.



D

For example, in Northern climates sunlight is associated with pleasant mood, and a rather dull foyer with a north or obstructed window, which leaves the interior like a cold aquarium, can be given a friendly atmosphere by a floor design which simulates a patch of sunlight. The wall colours, should, of course, be decorated to develop this effect.



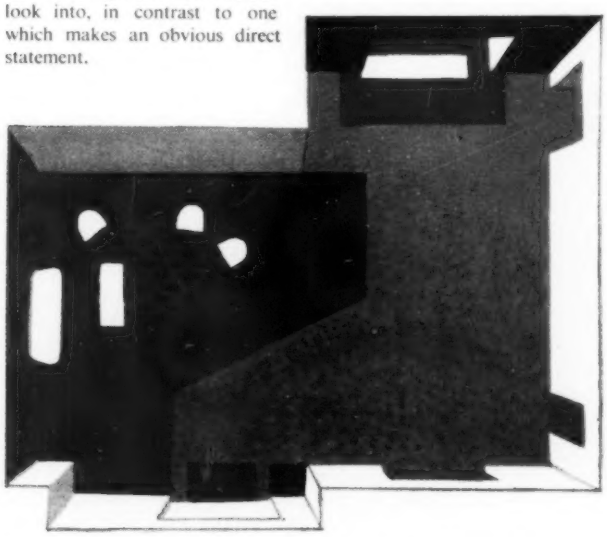
E *Pattern expresses purpose*

In administrative buildings, those long rectangular pipes with office doors down one side can be given an effect of logical progression by identifying the doors with a similar repeat pattern on the floor.

A large area, which it would be desirable but impracticable to relieve with carpets, can be broken up into zones of different character such as a walk-way across, a quiet zone, a lively zone, by different treatments on the one floorspace.

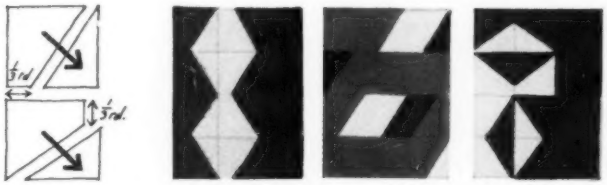
While I do not believe it possible to direct circulation in a large area by floor pattern, it is nevertheless sensible to relate the floor treatment to the activity which takes place in different zones, and to define steps and other hazards so that they are quickly recognized, particularly at night or in areas where there will be a low level of luminosity.

For a rest area we can lay out a subtle, non-repeating interchange of four or five colours of approximately the same tonal value, and so achieve an interesting floor that one can look into, in contrast to one which makes an obvious direct statement.

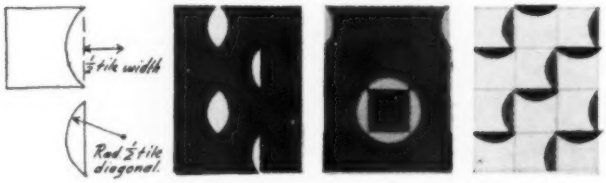


F *Lanes and areas of different interest (Plan view of Entrance Hall)*

The special treatment of linoleum floors is often written off as requiring tailor-made inlay to some elaborate key drawings, but by use of standard tiles and triangular half tiles, in conjunction with unbroken areas, so many permutations of colour, pattern and tone are made possible that cut designs need only be introduced when very special effects are required.



G *Simple cuts to make lively designs. (Details of die-cutting and hand-cutting techniques will appear in the second article of this series.)*



Nevertheless, there are such exciting possibilities in this direction that it would surely be worth the architect's while to appoint reputed artists to experiment with designs, just as he would appoint outside specialists to execute sculpture or a mural decoration. A floor can, after all, be a medium for the expression of ideas. It can give character to a utilitarian interior where decorative embellishment of other surfaces would be ruled out by cost.

Details of linoleum used in each illustration listed

A *Plain linoleum, cut. White and Dove Grey.*

B *Standard tiles. Charcoal, Black, with Arctic White, cut to strips one-sixth width of tile.*

C *Cardinal Red Marbled, and Oxford Blue and Yellow Plain, cut to strips.*

D *Plain—Brown R, Yellow and Black.*

E *Marbled—Black, Cardinal Red, Peacock Blue.*

F *Black and Brown R. Plain, and Peacock and Cardinal Red Marbled.*

NAIRN DESIGN BOOK

A full-colour book illustrating new directions in floor design will soon be available to all interested architects. If you would like to receive a free copy immediately upon publication, please write to: Michael Nairn & Company Limited, P.O. Box 1, Kirkcaldy, Scotland.

NAIRN MELOTONE LINOLEUM

The new range of Nairn Melotone Linoleum, consisting of 8 muted colours with softly blended marking, is illustrated on the right-hand edge of this page, together with a selection of colours from the plain and marble ranges. Please write for information to one of the addresses below or consult your technical representative.

NAIRN TECHNICAL ADVISORY SERVICE

Technical representatives, based at our offices in different parts of the country, are at your service to give advice or information on all matters concerning floorcovering materials. If you wish to consult one of these representatives, please write or telephone to any of the following offices:

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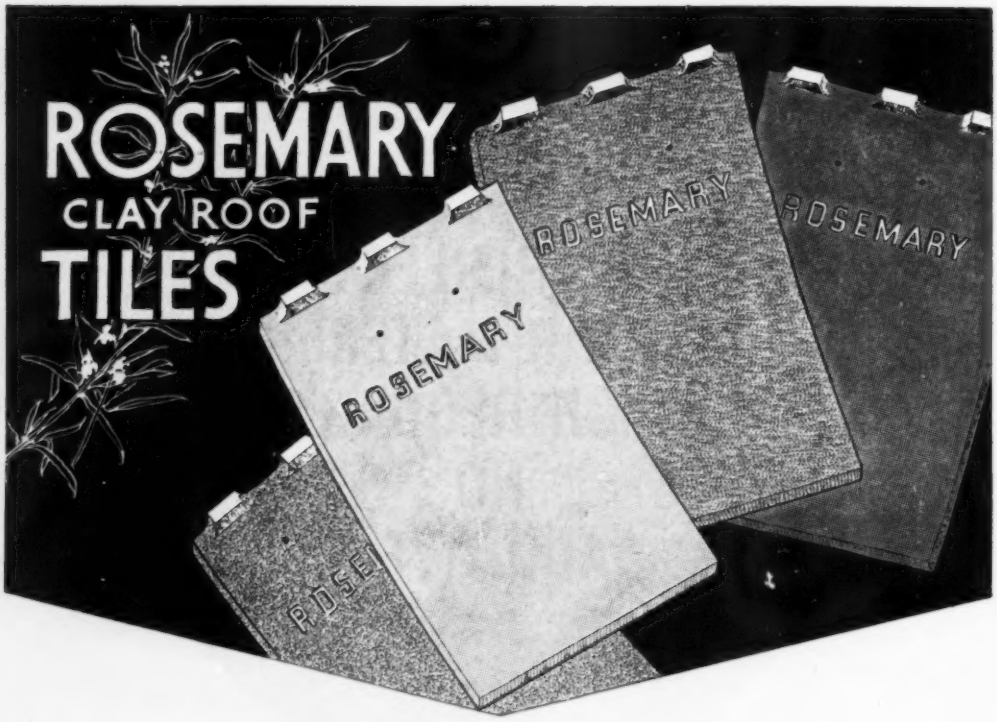
B



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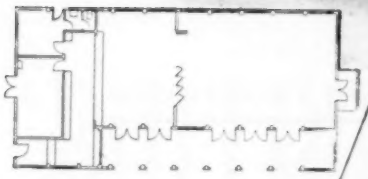

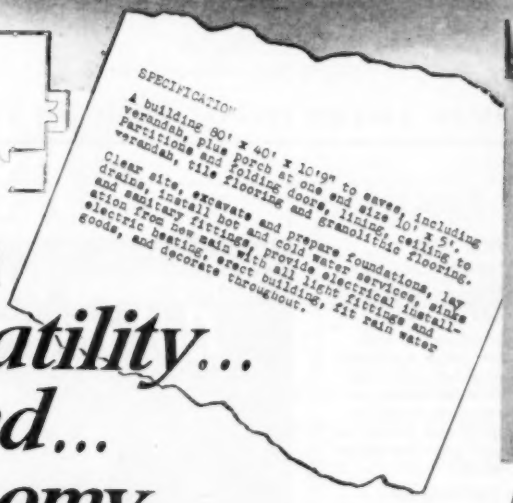
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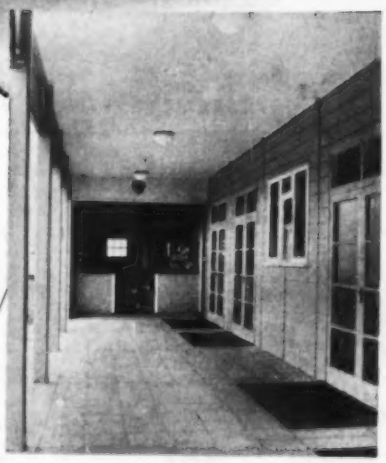

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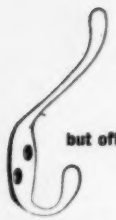
Not always "Off the Peg"  **but often our sealers are 'tailor-made' to suit special requirements!**

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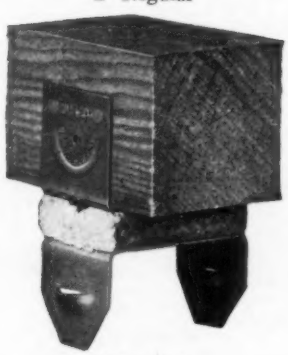

2" Acoustic

Only The Adamite Company is entitled to call its clips "Bulldog Clips". Only Adamite Bulldog Clips deserve such a name . . . they have a pedigree beyond dispute and a far stronger 'bite' than inferior imitations. There are two main types: The Bulldog Standard Clip which ensures a strong hold on floor and ceiling timbers, preventing movement and squeaking, and the Bulldog Acoustic Clip, which does the same job for floor battens, at the same time reducing impact noise by 15 per cent. Acoustic clips also provide a degree of springiness which makes them ideal for use in gymnasia, ballrooms, etc.

Full details of this range are contained in Bulletin 10. Please write for your copy.

'BULLDOG' clips are manufactured solely by

THE ADAMITE COMPANY LTD

94-98, PETTY FRANCE, LONDON, S.W.1.

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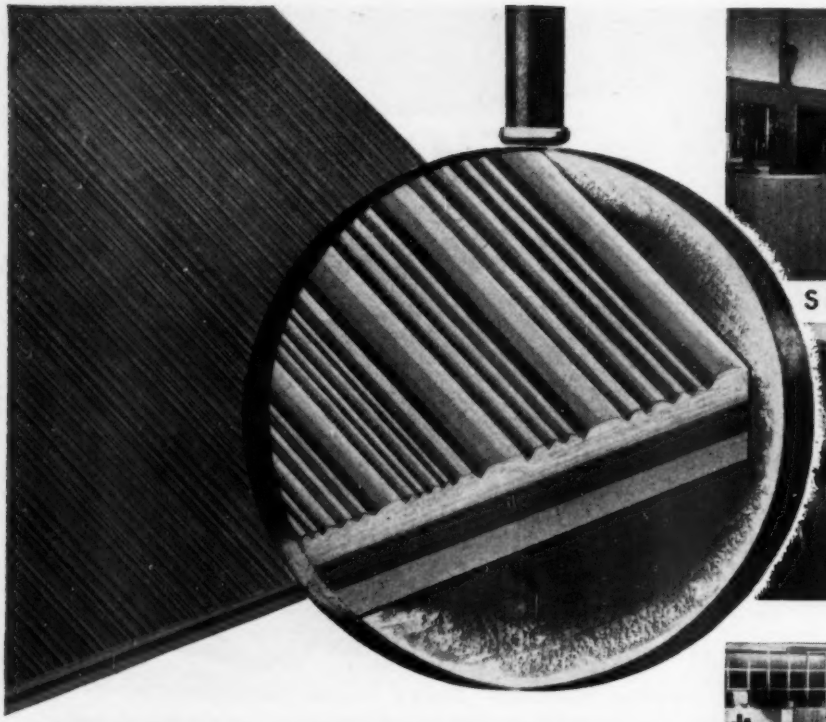
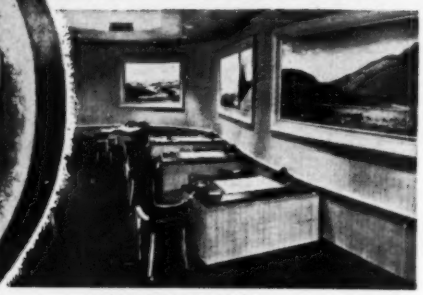
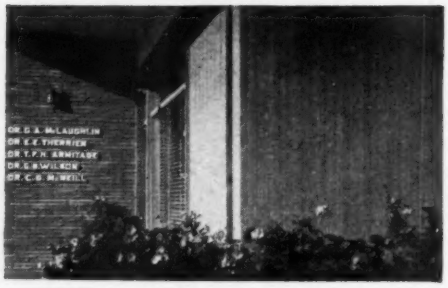


SHOP INTERIORS



OFFICES

CLUBS



EXTERIOR WALLS

WELDTEX

a new three-dimensional plywood

BEAUTIFUL indeed are walls of Weldtex, Seaboard's newest plywood. The random-width vertical grooves softly diffuse the light and break up the wall surface in a pattern of delicately pencilled shadow-lines. Joints between panels are absolutely invisible. In restaurants, clubs, offices and shops it forms a friendly relaxing background. Bonded with water-proof glue, Weldtex is also a splendid exterior wall finish, impervious to sun, rain and snow. If your usual supplier does not stock Weldtex he can order it for you. Standard panels 8 x 4 feet, ⅜ inch thick.

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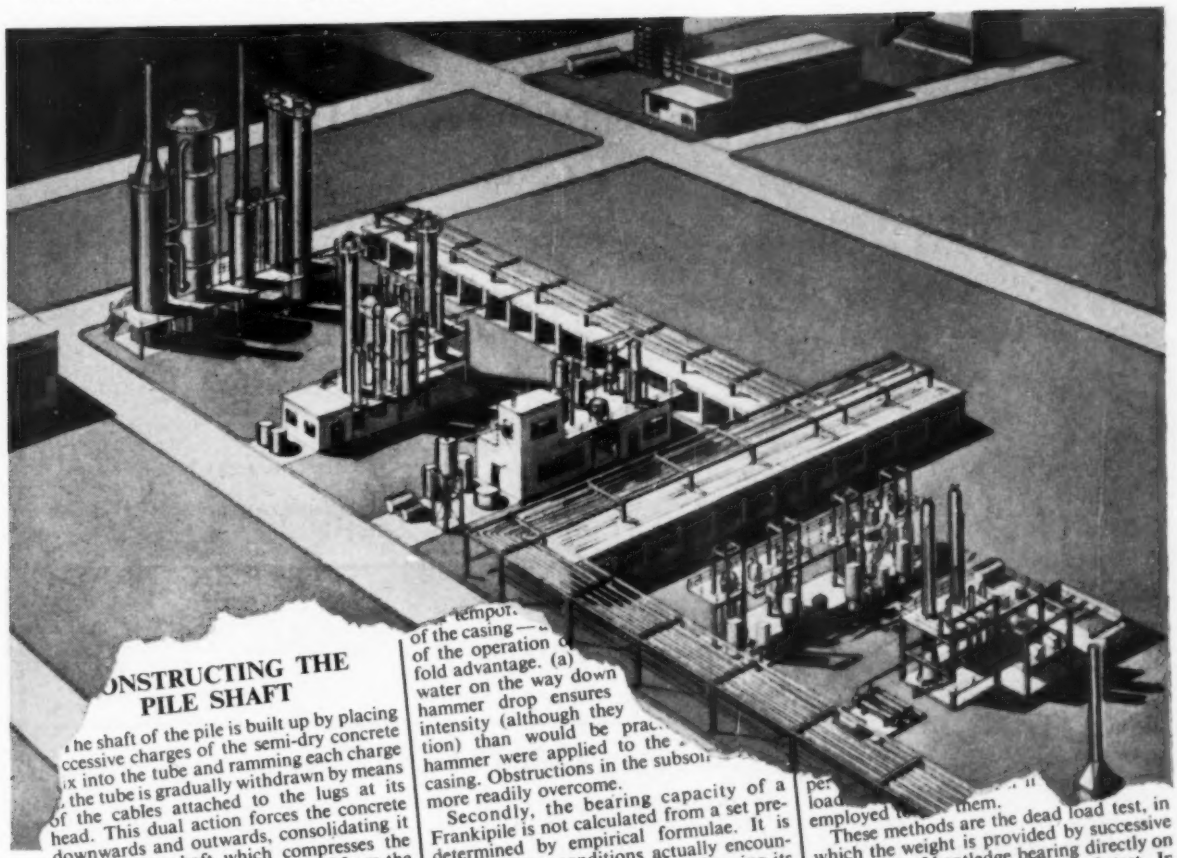

ONSTRUCTING THE PILE SHAFT

The shaft of the pile is built up by placing ccessive charges of the semi-dry concrete ix into the tube and ramming each charge the tube is gradually withdrawn by means of the cables attached to the lugs at its head. This dual action forces the concrete downwards and outwards, consolidating it into a dense shaft which compresses the surrounding subsoil as it is forced from the bottom of the tube.

The shaft is thus greater in diameter than outside of the tube, providing adequate er for the steel reinforcement and at same time ensuring the maximum skin action between its rough corrugated surface and the subsoil which has already been compressed by the driving process and is now compressed again by the greater girth of the pile itself.

During the formation of the pile shaft a mark on the hammer cable serves (in the me way as when the tube was driven) to intain the head of concrete necessary to ent the entry of water or any other gn matter. Should water accidentally the tube the heavy hammer jams in the e and the pile has to be re-driven. the practical assurance that a water-cement ratio is always fact this ratio is lower em of in-situ piling.

OWNERS:
South Eastern Gas Board

MAIN CONTRACTORS:
Woodall-Duckham Construction Company Ltd.

; THE PILE

shaft can be stopped at ground level, always has attained the adequate for stability. Except in nces no in-situ piles can e the ground level from

off the required er greater way, when p, the top of concrete pile and its rough collar e trimmed to leave a hard, clean surface the main reinforcement rods projecting

tempor.
of the casing —
of the operation
fold advantage. (a)
water on the way down
hammer drop ensures
intensity (although they
tion) than would be prac.
hammer were applied to the
casing. Obstructions in the subsoi
more readily overcome.

Secondly, the bearing capacity of a Frankipile is not calculated from a set predetermined by empirical formulae. It is assessed from conditions actually encountered when driving the pile and forming its bulbous base. An exclusive feature of the Franki system is the compaction of this base (like the rest of the pile) by direct mechanical action.

LATE NEWS

NEW EXTENSIONS FOR SOUTH EASTERN GAS BOARD

Another Oil Gasification Plant is being built at the Gas Board's Isle of Grain Works by Woodall-Duckham Construction Company Ltd. The installation will include Shell Gasification Plant with associated Oxygen Plant as well as the usual modern ancillary plants. It will produce more than eighteen million cubic feet of gas daily and is due to be completed in 1960. The site is extensive and the various large buildings will be supported by piled foundations. About 1,500 piles are being installed by Messrs. Frankipile Limited, of 39 Victoria Street, London, S.W.1, and the Company offers a free 95-page book on piling to Architects and Engineers.

pe
load
employed
them.

These methods are the dead load test, in which the weight is provided by successive increments of kentledge bearing directly on the pile cap, and two types of jack test. In the first of these types the weight of a ful test load of kentledge is gradually trans ferred on to the pile by means of the jack in the second, the jack operates not agains kentledge but against the uplift obtaine from adjacent piles.

These methods can be relied upon to gi equally accurate results, the choice betwe them generally depending on site conditio and the type of kentledge available.

Whichever method is used, readings taken at agreed stages during the process incremental loading until the pile is car ing the full test load. The full load is t allowed to remain on the pile for a de mined period, which is normally 24 ho

After the recording of any settlen which may have occurred during this pe the load is gradually reduced again, r ings being taken at each stage in the way as when the load on the pile was t increased.

When the pile is completely free of l final reading is taken. The difference bet this and the reading under the full tes is recorded as the permanent settleme

Piles are normally tested singly bu also be tested in groups.

TESTING THE FRANKIPILE

All piles constructed by the Fra Compressed Pile Co. Ltd., are gua to carry the working load specifie guarantee given by the company is su Lloyd's.

FRANKIPILE

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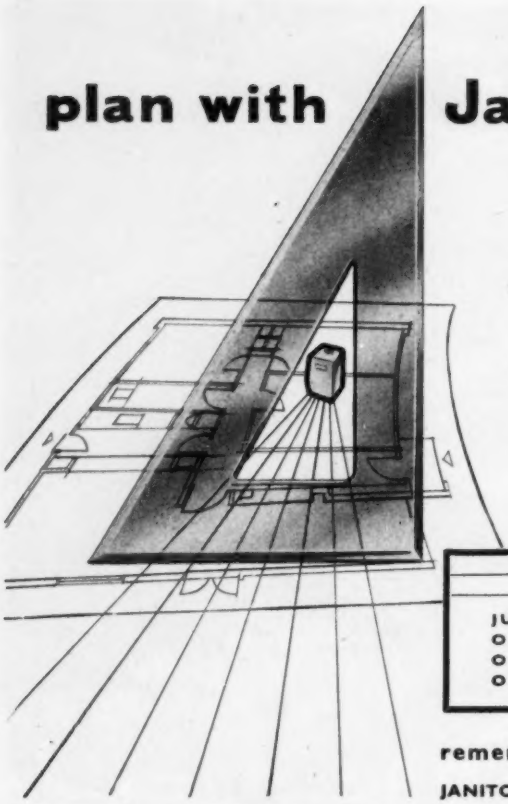
JW 4



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OIL-FIRED		SOLID FUEL	
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O.2.	125,000 B.t.u/h	A.2.	80,000 B.t.u/h
O.4.	200,000 B.t.u/h	A.2x.	110,000 B.t.u/h
		A.3.	140,000 B.t.u/h

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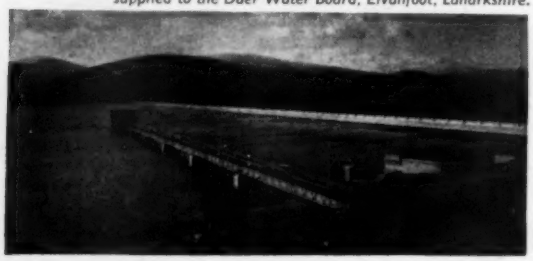
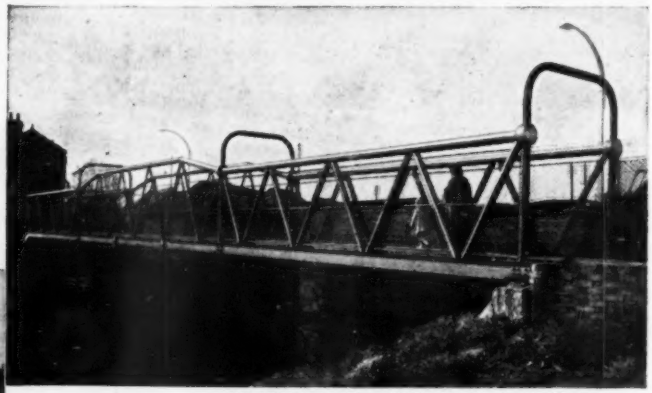
TUBEWRIGHTS' Tubular Steel 'Usk' Foot Bridges

Castle Pleasure Grounds, Tamworth, Staffs. 120 ft. span.



Six 90 ft. span standard 'USK' bridges supplied to the Daer Water Board, Elvanfoot, Lanarkshire.



'USK' Bridge at Avery Hill Road, Woolwich. 100 ft. span.

The 'Usk' bridge, suitable for two-way pedestrian traffic, is built up of sections, so designed that—used singly or in various combinations—they provide clear spans ranging from 20 ft. to 120 ft. in steps of 10 ft. with a clear width of 6 ft. The 'Usk' is designed to break down into sections to facilitate transport, handling and erection. The standard sections are supplied with handrails.

Regd. Trade Mark

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ESTATE DEVELOPERS SPECIFY HILLS DOORS

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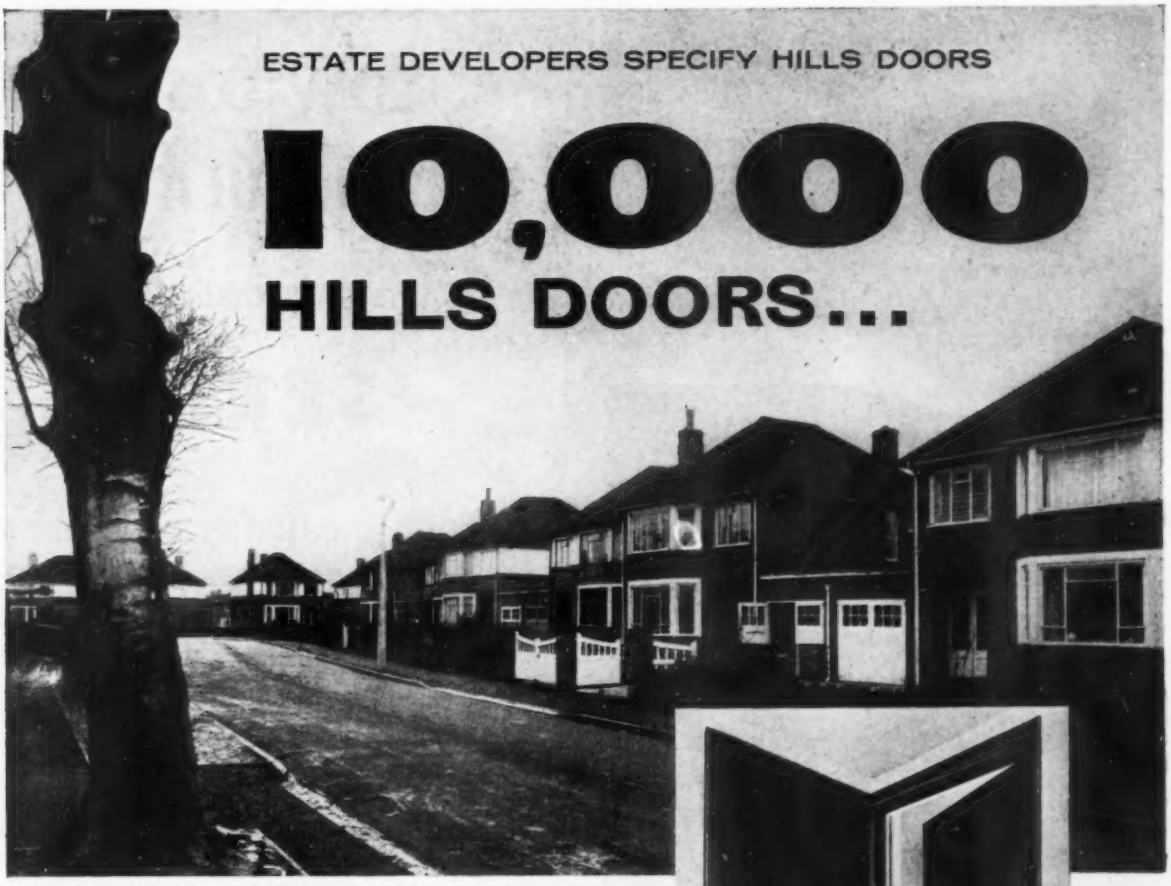

Photograph of Little Sutton Estate, Cheshire, by courtesy of Thomas Warrington & Sons Ltd. Ellesmere Port, Cheshire

SUPPLIED IN 1957-8

TO THOMAS WARRINGTON & SONS LTD

Yet another leading contractor chooses Hills' doors for the best of reasons—unvarying quality and true economy. Every door is guaranteed against defects of workmanship and materials and backed by the reputation and experience of Britain's leading door specialists. Most Hills' doors can be supplied from stock, in any quantity and delivered straight to the site. At Little Sutton, Cheshire, and on Estates all over Britain, Hills' doors are adding to the appearance—and value—of modern housing developments.

DURADOR interior flush doors have the exclusive PLACAROL core—hundreds of wooden spirals—bonded within balanced West African hardwood plywood facings for strength, stability and rigidity with economy in weight and complete freedom from surface undulation.

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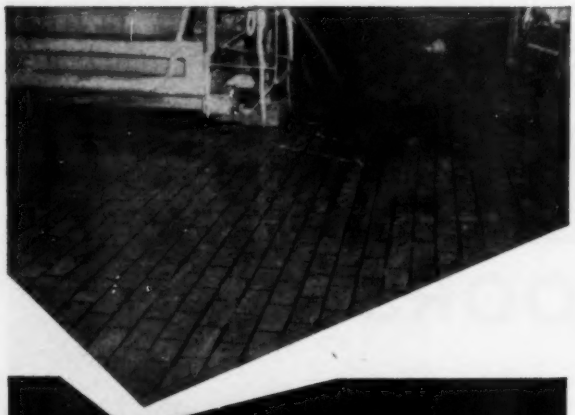
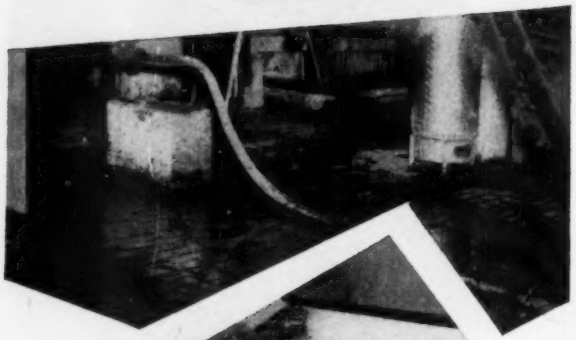
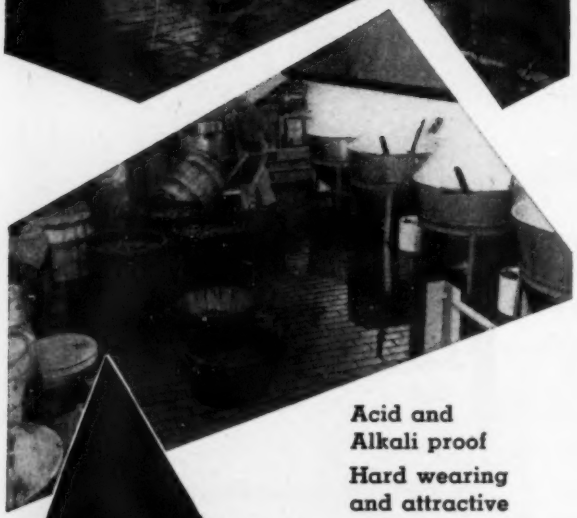
P.3208



Acid & Alkali Resisting PAVING

We specialise in the design and installation of all types of industrial corrosion proof masonry. Also acid proof plastics for chemical plant, tank linings, etc.; and acid and alkali resisting paint.





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In addition all materials used in 'SEEL' linings are completely incombustible. Being sprayed, it is intimately shaped to the contour of the roof surface, eliminating air spaces.

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Shopfitters : Stewart Fraser Ltd.

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'BLACKFRIARS' SYSTEM

offers unlimited scope to the designer

The photographs illustrate an ideal application of the 'Blackfriars' System for a motorcar showroom entrance. Special retractable springs enable entrance doors and sidelights to be folded back to provide a completely free entrance.

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Time was when...

DRAUGHTPROOFING was an afterthought, prompted only after time and the elements had sought out the weak spots of a building, to allow the draughts to go to work. Although the range of CHAMBERLIN fitments has for many years proved its effectiveness in curing draught problems, it is only comparatively recently that architects have come to appreciate the fact that draughts can be prevented at the drawing board, when fundamental consideration is afforded at the planning stage, along with that given to heating and ventilation. The findings of over half a century's experience has gone into the production of a binder folder, containing full technical details, with dimensional drawings of our full range of weather proofing materials, which can be yours on request. The CHAMBERLIN technical advisory service, implemented by teams of skilled installation craftsmen, is also at your disposal.

ARCHITECTS and BUILDERS are invited to write or 'phone for this set of data sheets, which will be sent by return of post.

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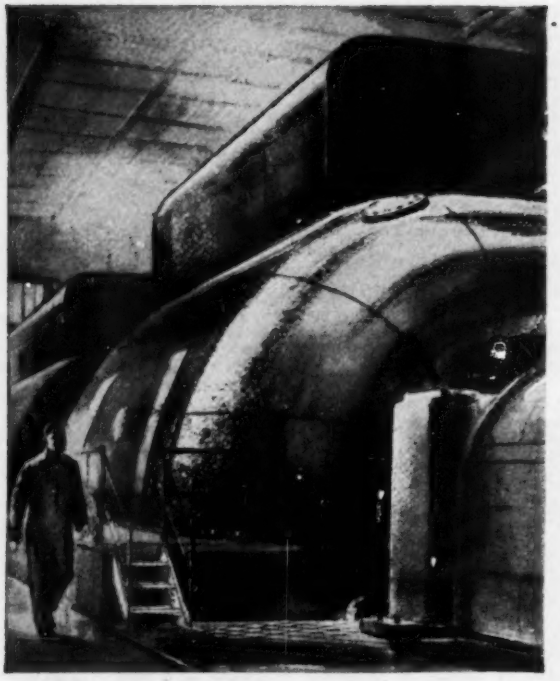

The world's largest Generators will help to fill the demand for still more power

The development of nuclear energy for generating electricity is still front-page news. Less publicised, though no less outstanding, are new developments in "conventional" generating plant. The turbo-alternator shown here is a 550,000 kilowatt unit – twice the capacity of the next largest on order for the Central Electricity Generating Board. It has been designed for the projected new power station at Thorpe Marsh. For Blythe 'B', another new station, 275,000 kilowatt in-line units are on order. They will be powered by steam at 2,350 lb. per sq. in. and 1,050°F, with reheat to 1,000°F.

Nuclear power will play an important part in meeting the ever-increasing demand for electricity. Work is now in progress on the first three nuclear power stations, at Bradwell, Berkeley and Hinkley Point. By 1966/7 some 5 to 6 million kilowatts of nuclear-generated electric power will be available.

Though these projects will not be completed for some time, the Central Electricity Generating Board plays an important part in today's fight against inflation. Power stations are being built at a cost no greater than in 1948 – £50 per kilowatt installed. And, although the output of the industry has doubled since 1948, the increase in manpower is only about one-third.

By providing today for the power we shall need in years to come, the Central Electricity Generating Board is building a secure foundation for our future prosperity.

CEGB

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- **Beautiful**
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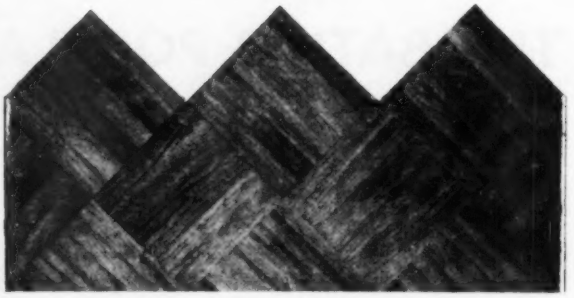
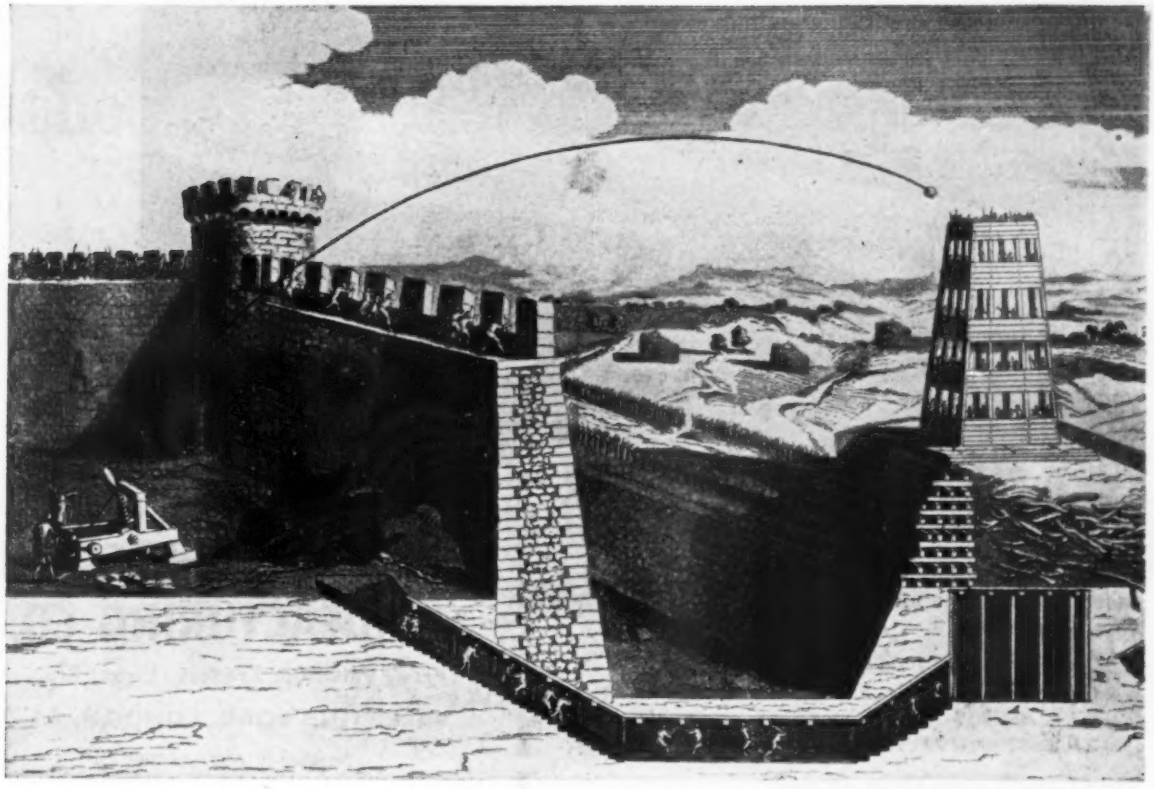




The seige engine of Cosroez at the Seige of Edessa during the Crusades.

WHAT GOES UP... MUST COME DOWN!

That is why so many lighting installations incorporate L.E.F. Raising and Lowering Gear

The problem of servicing lights high up out of reach is one frequently met by the Architect. Yet it can be so easily overcome by the use of L.E.F. Raising and Lowering Gear which enables lights to be lowered to ground level. Not only is this system quick and simple, but it is also more economical of maintenance labour. An important factor from the Architect's point of view is that the gear can be unobtrusively built into the ceiling.

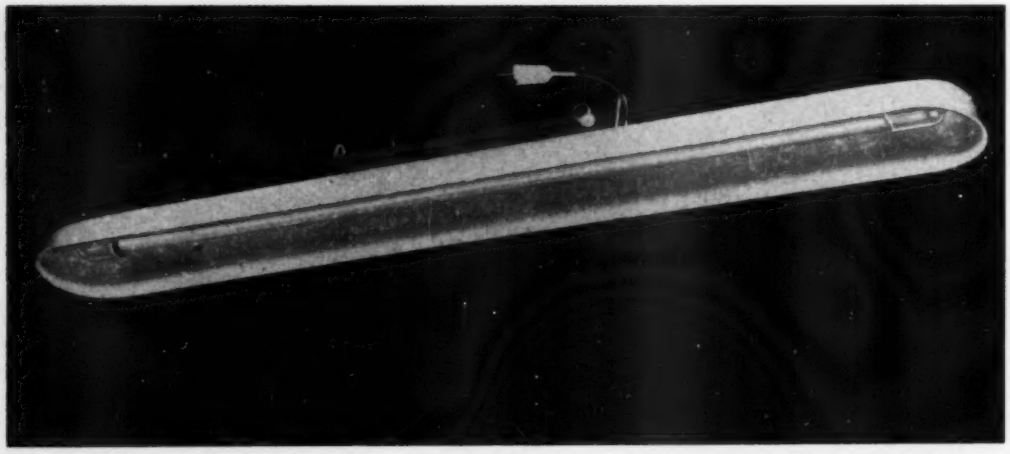
L.E.F. Raising and Lowering Gear is designed for both interior and exterior lighting and it is particularly important that London Electric Firm are consulted at the planning stage to meet technical requirements.

LLOYDS Lime Street, London.

The main lights over the under-writing room of this new building presented a maintenance problem which was overcome by the installation of L.E.F. Raising and Lowering Gear. The Raising and Lowering Gear is built into the ceiling and is completely concealed when the lighting fittings are in the raised position.

L&F **LONDON ELECTRIC FIRM LTD., South Croydon, Surrey. Telephone: Uplands 4871**

Tib 12



A new type Fluorescent Fitting especially designed for the Chemical, Brewing, Laundry and Food Industries.

The above Fittings have had rigid tests in chemical laden atmospheres. A full test report can be sent to you on request.

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N.C.F. 2	2ft single	£6.15.6	N.C.F. 22	2ft twin	£7.19.6
N.C.F. 4	4ft single	£8.10.0	N.C.F. 44	4ft twin	£11.10.0
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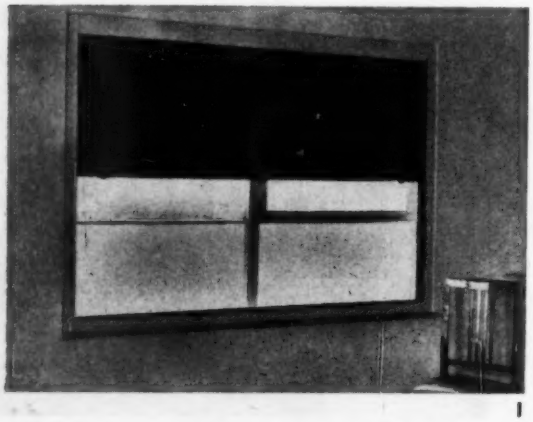


The 'SUN-DARK'

A completely new idea. A Venetian Sunblind, also giving an amazing degree of blackout when required. It runs in neat linings—Not just a dim-out.

Ideal for Hospitals

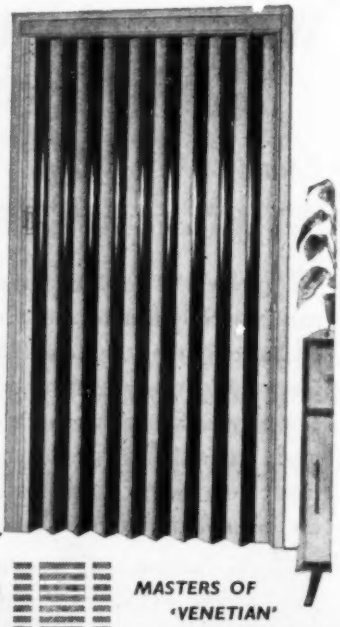
Also the "SUNUMINIUM" Venetian Blind—the most inexpensive and robust blind of its kind. Available with Carr's "Terylene" Tapes and Cords, or French's Fleur-de-lis woven tapes or Fleurette plastic-coated tapes.

British Materials—British Labour.

The New 'GIRLING' Venetian Doors

Right up to the minute are the new Avery Venetian doors—a wonderful idea which fits perfectly into modern interior schemes.

The door is extremely light in operation and can be supplied to fit any size opening. Single or centre dividing. Wide range of colours with different colours each side if required. Please write for leaflet.



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the most economical way to keep FIRE at bay

In 1957* alone, damage caused by fire in the U.K. exceeded the colossal sum of £25,000,000. In addition, immeasurable losses were sustained in the shape of decreased custom and goodwill, wasted labour, delays in fulfilling contracts and serious setbacks in planned development.

Can anything be done by architects and builders to prevent these recurring losses?

Right here in Britain, there are vast deposits of Gypsum—a mineral that cannot burn. Long recognised as being unique in its resistance to fire, Gypsum provides its own "sprinkler system"—it contains a 20% proportion of water of crystallisation. At temperatures above boiling point, this water vaporises. When no water remains, a process known as calcination occurs—beginning on the surface exposed to the fire and continuing gradually into the Gypsum. The crust of calcined Gypsum adheres tenaciously to the remaining material, effectively retarding further calcination. Thus, a most efficient barrier is raised against the passage of heat and the spread of fire.
Modern building materials are now manufactured from incombustible Gypsum. Use them to avoid unnecessary fire risks.

* *Latest published figures. 1958 shows the same pattern.*

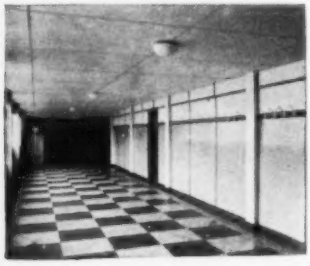
...learn more about them overleaf

early co-operation will ensure good design

1. This photograph shows Paramount Plasterboard used for dry lining of external walls ready to receive the finished decoration. It also shows the use of Paramount Dry Partition consisting of 2 sheets of Paramount Plasterboard separated by a cellular core to which they are inseparably bonded. The use of Paramount Plasterboard for the ceiling will be noticed, and also of Paramount Cove, a section of which is lying, in the bottom left-hand corner.

Paramount Plasterboard

PLAIN · INSULATING · WATER RESISTING · PLASTIC FACED



3. 97 children lost their lives in a Chicago school fire recently. To help to prevent such an occurrence in this Bedminster Downe Secondary school, Paramount Dry Partition has been used.

Paramount Dry Partition

PLAIN · INSULATING · WATER RESISTING · PLASTIC FACED

5. Paramount ¾" Plasterboard for 2" solid partition 11' 3" high, erected at offices in Liverpool.

Paramount 2" Solid Partition

BLUE HAWK PRODUCTS

BRITISH PLASTER BOARD

7. Spreading Thistle Gypsum Plaster on the walls of a fire-safe home.

Thistle Gypsum Plasters

BOARD FINISH PLASTER · BROWNING & WALL FINISH PLASTERS
CONCRETE BONDING PLASTERS · METAL LATHING PLASTER
ACOUSTIC PLASTER

9. The columns and beams in this large departmental store were *NOT* protected with Paramount Plasterboard.

Blue Hawk RSJ Clip

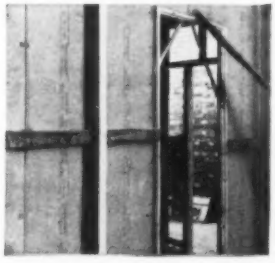
In both domestic and industrial buildings, the prevention of spread of fire is of vital importance. Adequate protection can save lives, provide firemen with extra time to fight the outbreak and can often make the difference between superficial damage and total loss.
Because it has a core of Gypsum, the mineral that cannot burn, Paramount Plasterboard is the **SAFE** sheet lining for roofs, walls and ceilings. It is graded as a Class I material—one that constitutes no fire hazard. Unlike most other building boards, it requires no costly fire-retarding surface treatment or special impregnation of any kind.
The various grades of Paramount Plasterboard provide the most economical form of fire-safe construction—all costing less than 6d. per sq. ft. As an additional bonus, they also offer the considerable advantages of thermal and sound insulation for the same initial outlay.

2. Paramount Insulating Plasterboard employed as a fire-safe roof lining in a new factory. They make matches in this one.

Considered to be one of the most valuable contributions to modern building practice, Paramount Dry Partition is also a highly effective barrier to flame spread, particularly when used to sub-divide large spaces in factories, workshops, offices, etc.
Consisting of two Paramount Plasterboards enclosing a tough, fibrous core, Paramount Dry Partition is a strong, rigid, ready-made wall—ideal for dividing interiors and cladding external walls. It is easy to cut, handle and erect and is most adaptable. Being a "dry" product, its use eliminates the delay normally caused by wet work.

4. Paramount Dry Partition acts as an effective fire barrier in Lloyds of London—the Insurance Centre of the World.

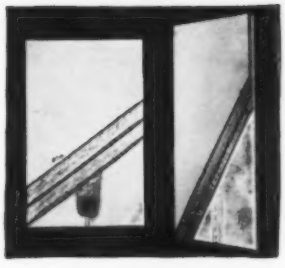
Another fire-resisting type of construction is formed from $\frac{1}{4}$" Paramount Plasterboard coated on site with $\frac{5}{8}$" thick Gypsum plaster on both sides. The finished partition is extremely strong, light, rigid and free from cracking and crazing. It is particularly useful for light partitions, shelving in laboratories or stores for inflammable goods, shop fitting and the construction of storage cupboards, etc. No comparable partition achieves such economy of space. It has a 1-hour fire resistance.



6. Paramount $\frac{1}{4}$" Plasterboard for 2" solid partition, being erected as a fire stop in a large undivided factory.

FIRE-RESISTING MATERIALS

All the plasters in this range are manufactured from Gypsum—the mineral that cannot burn. Consequently, their use is indicated wherever fire-safe construction is essential. All conform to B.S.1191, are graded as Class B and are known as Retarded Hemi-hydrate Gypsum Plasters. They offer the maximum uniformity in setting time and workability and are non-shrinking and time-saving. The range meets all requirements.



8. 2 or 3 coats of Thistle Gypsum Plaster on Paramount or Thistle Gypsum Plasterboard give a high fire resistance—up to 2 hours and more.

As a result of past experience when factory roofs have collapsed with disastrous effects, it is now becoming standard practice to protect all structural steelwork against fire. This can be done most economically by cladding steel columns and beams with Paramount Plasterboard, fixed in position by means of a simple, ingenious device called the Blue Hawk RSJ Clip. Made from hardened and tempered spring steel and cadmium-plated to resist rust, the RSJ Clip replaces older methods of timber bracketing—thus saving time (as much as 90%!), labour and materials.

10. Steel columns and beams protected with Paramount Plasterboard and fixed with Blue Hawk R.S.J. Clips in a garage at Coventry. Erected *AFTER* the Jaguar fire.

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- ☐ Insulating Plaster Baseboard
- ☐ Insulating Plaster Lath

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- ☐ ¾" Plasterboard for Two-inch Solid Partition
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- ☐ Cove
- ☐ Water Resisting Plasterboard
- ☐ Plastic Faced Plasterboard

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Blue Hawk

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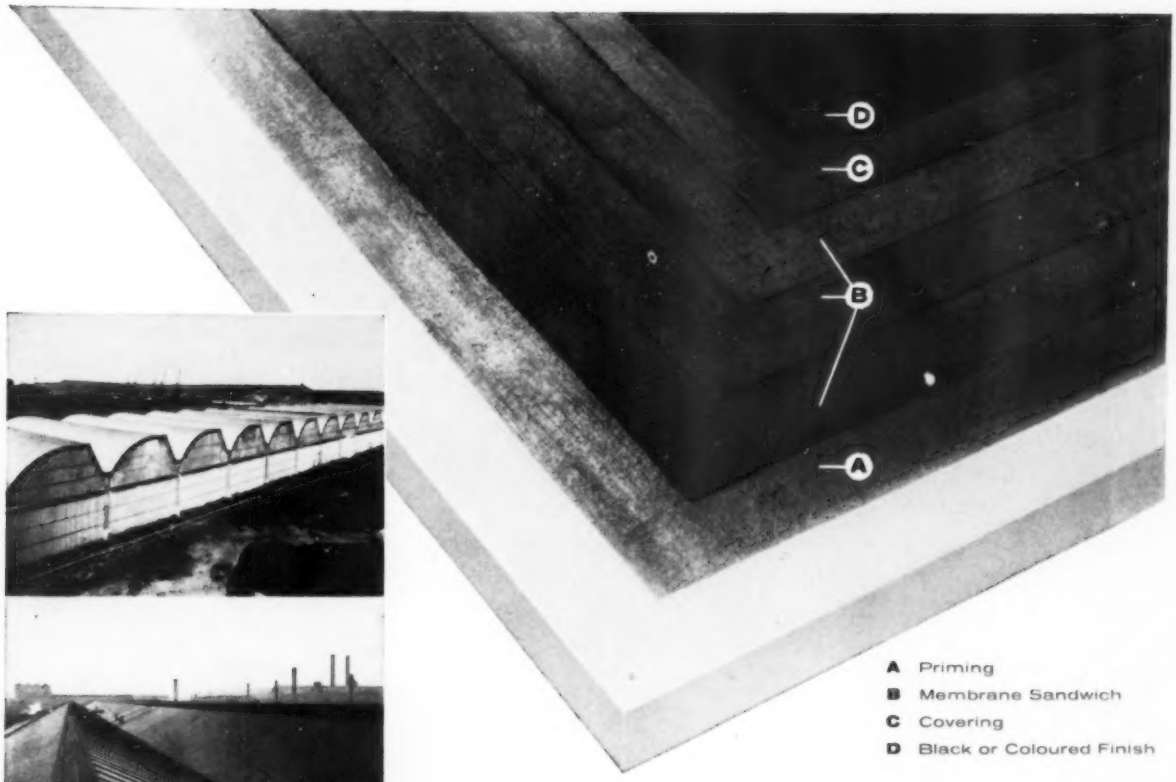

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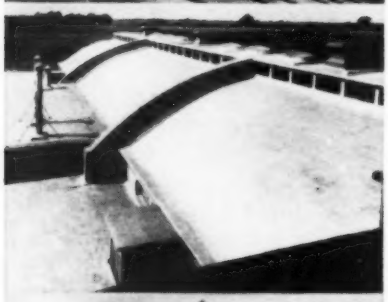

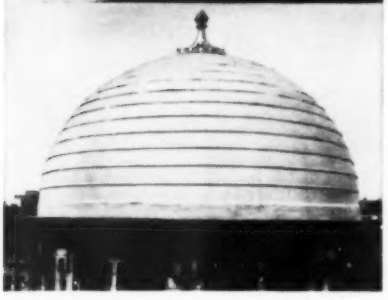

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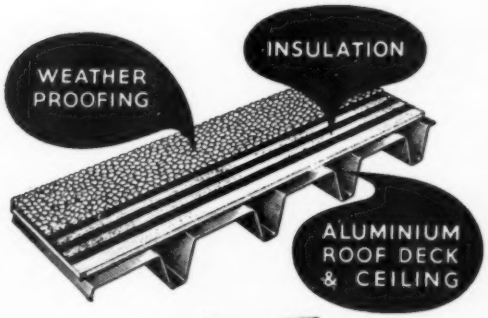

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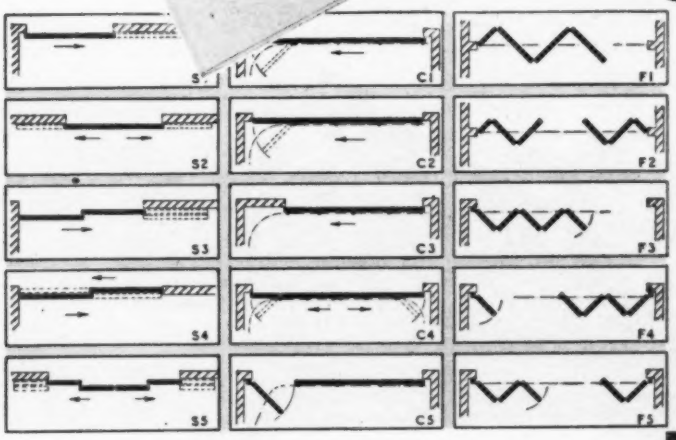

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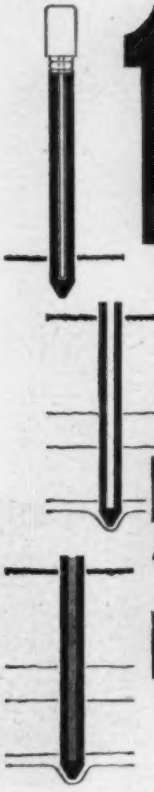

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Vol. 215 No. 16

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22 April 1959

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WHO GETS THE WORK?

THERE are some 3,000 private architectural practices in Great Britain, and they absorb half the profession. Three-quarters (74 per cent) of them have five or fewer architectural staff, and one in five consists of one architect on his own working with no architectural assistant whatever. These and other important findings are contained in a very interesting survey of private architectural practice, made for the years 1955-57, reported in the current issue of the *R.I.B.A. Journal*.

On the vexed question of distribution of work, the survey confirms the inequalities often voiced—only 10 per cent of private architects' firms employ more than 10 assistants, yet the average volume of building work certified by these firms is almost the same as that certified by 75 per cent of all private architectural practices.

The survey indicates that the average yearly total for new building work was about £1,200 million, of which private architects certified about one third in the period under review. The extent of architects' employment becomes much clearer when the total value of work is broken down under categories of building work—housing, industrial, commercial, educational, other public buildings and farms—which, in the survey, is shown by means of a diagram.

Housing was by far the greatest building activity in the years under review. Its yearly average value was about half the total of all new building work; private architects certified less than one fifth of it. The value of industrial building was under half that of housing and private architects certified 34 per cent. Commercial building (offices, shops, hotels, etc.), although valued at only just over half that of industrial work, was the most rewarding field for private architects, who certified 77 per cent. Educational building was valued at two thirds of commercial, private architects certifying about half of it. Of the relatively small value of other public buildings and farms, private architects certified most of the former but only 7 per cent of the latter.

It is a pity the survey did not take into account the value of housing designed but not supervised by architects. This is the reason for the remark in the survey that the housing figures may be misleading. However, the value of housing is so large compared with other building work and the contribution of the architect apparently so small, there would seem to be scope for getting the private architect (particularly the smaller practices) a larger slice. There is a very great need to improve the standard of speculative house building. As houses become more plentiful good design will become a more important selling factor. This is a situation which demands the close attention, both of architects and of house builders.

EVENTS AND COMMENTS

CHARLES EAMES AT THE R.I.B.A.

The R.I.B.A. was packed for the two Eames' evenings last week. On Tuesday, Bill Howell introduced a programme of Charles Eames films, with Eames himself to answer questions afterwards. On Wednesday, with the newly returned Africa-bronzed president in the chair, Eames gave the annual discourse for 1959.

Unlike many of those present, I had never seen an Eames film, and am thus able to write of a new discovery. There were, I think, seven films in the programme and this, in spite of their individual brilliance, was rather too much of a good thing. As Eames said himself, the films were not made to be seen in this way, althought they are all quite short. I forget their precise order but the the first was certainly about washing down a school playground, where the creeping, bubble-patterned water filled the screen for perhaps a quarter of an hour to the accompaniment of some of Bach's Goldberg Variations. The second was about a festival of the dead in Mexico. This film was almost entirely made up of still shots, left on the screen for between one and two seconds. Each shot was a winner. The method of changing by a straight flash, or various kinds of mixing, was constantly varied, with the result that the film had great movement. The festival itself is curious,

A view of the final plaster stage of "Meridian" the sculpture designed by Miss Barbara Hepworth, O.B.E., for State House, High Holborn, London. The sculpture is to be cast in bronze at the Susse Freres foundry in Paris

for everyone buys and eats sugar skulls and skeletons, the production of which is a national folk-art. The quick-change technique was used in another film illustrating, with most beautiful pictures, two great German baroque churches, to an accompaniment of music played on the churches' own organs. In this film, many of the picture changes were synchronized with the music. This technique used on architecture seemed to me to be not entirely satisfactory. In the first place the change was too rapid for the often vanishing pictures to be taken in, and in the second I found that my eyes were quickly tired by the constant flickering. This tiredness was partly due to having already watched another film using the same technique. Many of the pictures can only have been on the screen for a second. So many blurred my memory and left me confused. The technique, a little slowed down, is excellent for architecture and preferable, I think, to the constantly moving camera. For light relief we had a very funny, yet instructive, drawn film to illustrate the potentialities of the products of I.B.M. (International Business Machines). This might be taken as an example of a first-class trade film, for it taught its lesson admirably and was extremely funny without insulting its audience's intelligence. A film, again using the rapidly changing still technique, of the Eames' own house, near Los Angeles, told me, at any rate, very little about the house, but quite a lot about their collection of extraordinary things. By this time I had begun to wilt, but a toy parade to marches by Sousa, and the fascinating Toccata for Toy Trains, quickly revived me. The latter is based on some wonderful American collections of toy, as opposed to model, trains, and consists exclusively of pictures of them on the move, drawing into stations or passing each other against enchanting toy landscapes. There was something extraordinarily appealing about this particular film. Many of the toys were caricatures of their originals, and, because of this, brought out their main characteristics with tremendous force. From time to time I wondered how it was all done, and this applied particularly to one shot, where the camera passed right through the furnace and cab of the locomotive and then down the gangway of each saloon coach.

After all this, Eames arrived surprised both by the size of the audience (there must have been 700 there) and by their enthusiasm. He brought with him his latest film, one minute 40 seconds long, on the subject of troubles in Algeria and France, leading up to the election of General de Gaulle as Prime Minister. This was in black and white and entirely made of stills from newspaper illustrations. The sound track, which was turned up very loud on Eames' instructions, was a jolly tune we all know, but I cannot name, played by a musette orchestra. The speed of picture-change was related to the dramatic build-up, as was the music. The peak of violence was followed by a picture of the general sitting by himself quietly in the Assembly; then more violence and a return to the lone figure. Then action, order, rejoicing and stability. All in under two minutes. A most brilliant *tour de force*. "Isn't it good," drawled Eames, "to see a really short film."

On Wednesday the hall was again packed. There were very few seats to be had half an hour before the starting time. I found Eames pleasant to listen to but devilish difficult to understand. He read part of the time and apologized for it, saying that he was more accustomed just to speak than to read. He did not like reading because he could not understand what it all meant. Mainly he talked about the use of computers to solve problems, and the importance of pro-

gramming computers correctly. He estimated that in programming, about sixty per cent of the final problems were solved. This seemed to him good enough to dispense with the computer. All this he said was building up to a kind of a joke. He named Frank Lloyd Wright, Le Corbusier and Mies van de Rohe as great innovators whose ideas might be woven into a platform—the programme—from which the present generation (the computer) might reach out to solve the problem of architecture. At least, I think that is what he said. Sir Hugh Casson's vote of thanks in simple English sparkled as usual, but seemed made of gossamer beside Eames' super-nylon man-made mesh of double talk. Looking round, I saw no look of puzzlement on the faces of the young. Is it that they understand the sound of this kind of thing without knowing what the words mean, while leaving us old fogies to stew over the meaning of words?

THE A.A. RECEPTION

It has always been said of this party that if only there were fewer people there it would be easy to find one's friends. It has now been proved that this is not so. This year, all except the official guests had to pay. It used to be free, then members had to pay for their guests and then, as an added economy, "all pay" was introduced. This resulted in a fairly sharp drop in numbers and more elbow-room everywhere. In spite of this, large numbers of people remained lost for the entire evening. This, no doubt, was partly due to there being fewer people to be asked whether they had seen them. The decorations, done by a team of students working under Bernard Myers, were outstanding—the basement hall a jungle, the main bar a music hall and the second dance hall a flowering bower. Very special lighting by Lord Primrose added enormously to the success of the painters and decorators. Ultra-violet—or was it infra-red?—light in part of the basement made those in white glow and showed quite clearly that my shirt for one was not laundered with the very latest detergent. The exhibitions were, this year, nearly all paintings, Roger Hilton, Ivon Hitchins and Patrick Heron, with a few pieces of sculpture by Edwardo Paolozzi. Entertainment was provided in the bar, under very great difficulties because of the chatter, by an extremely funny pair from the R.C.A., with a lantern lecture and girl-sawing and knife-throwing acts. The library cabaret was, unfortunately, nothing like as good as usual. According to *The Times*, a lot of distinguished people were there. I saw very few of them. Dennis Clarke Hall was round and about more than most presidents, and the evening seemed to be over in a flash, thus proving that it was a good party.

CHAMPAGNE AND CORONETS

The Building Centre stepped smartly into Debrett a week or so ago when the Lillieshall Company presented its new Sculptura range of sanitary fireclay. The chairman of the company, the Earl Granville, M.C., welcomed the guests, and their consultant designer, the Marquess of Queensberry, described his work. I see from *Punch* that the marquess is to be professor of ceramics at the Royal College of Art. He was at Eton, in the Royal Horse Guards, and at Chelsea School of Art, at the L.C.C. Central School of Art and Crafts, North Staffordshire Technical College, and in a factory or two. As he is still only thirty, it seems to me that he has moved pretty fast. Champagne and hot Shropshire fidgets pie were served, the pie proving that all is not Greek that's Moussaka—more or less.

A model of the sculpture for the side of Thorn's new building

The exhibits showed a great revolution in the products of this old-established firm and included some pleasant new shapes, and one or two that were less successful, including an ugly lavatory basin pedestal. Some of the low and sloping w.c. pans were excellent. Foot flushing control was provided for some pans and pretty elementary it was. I could not help comparing the engineering of it with the neat below-floor devices to be found in Switzerland and Germany. The Lillieshall Company covers the whole range; as Lord Granville said, "If we can't get you on the bidet we'll have you on the mortuary slab". The reception was admirably run with a minimum of talk and fuss.

SCULPTURE FOR THORN ELECTRICAL BUILDING

As Basil Spence's Thorn building emerges from its scaffolding the design of the five-ton sculpture to be fixed to its blank end wall is announced. It will be 80ft high and has been carried out by Mr. Geoffrey Clarke, one of those responsible for the stained glass at Coventry. He also designed the very beautiful altar furnishings in the Chapel of the Cross, now in use below the cathedral. It is extremely difficult to appraise the new sculpture from my picture. Thorns are certainly suggested and possibly TV aerials as well. A good deal will depend on how clean it is kept, and—oh lor!—what about the starlings?

ABNER

The Tumpkins Saga — II

by ALBERT ANARISC

Alas, Poor Yorick

WHENEVER Uncle Leonard comes down from the north he stays at "Fairlawn" with his brother, Percy Tumpkins, his sister-in-law, Isobel, and their only son, George Walter, quantity surveyor, referred in typical subject R.I.C.S. Final 1956-7-8. "Fairlawn" is semi-detached, 1936 Spec. in a London dormitory (north of the river), alike to a million others, except perhaps for the coloured glass in the landing window and a cross-legged plaster gnome who fishes on the front lawn.

Uncle Leonard is tall, dark, earthy, confident and embarrassingly outspoken. He has the northerner's mistrust of charm. He is a born debunker. Not surprisingly, therefore, he finds his nephew George a little difficult to live with, for George affects a cigarette holder and wears a homburg hat to town. What is more—and Uncle L. does not know this—George is saving to buy a British Warm. That is the sort of quantity surveyor George is, the ex-National Service corporal who fancies his—who fancies himself in a British Warm.

One night last month George had taken some work home from the office and on the green cloth that covered the dining room table were spread abstracts, dimensions, draft and printed bills. He was pricing a final account—it was one of those which lies dormant, almost complete, for two years, then at somebody's whim suddenly bursts into life and must be signed within three days. It was a peaceful evening scene—Mrs. Tumpkins darning socks, Mr. Tumpkins sitting, as he so often did, in shirtsleeves looking at pictures in the fire and waiting for "Sportsview" at eight o'clock. Uncle Leonard, who was one of those uncles who reads Dickens and Shakespeare and Oliver Goldsmith, put down his *Old Curiosity Shop* and strolled across to the table at which his nephew was working.

"How are you getting on, lad?"

"Very well, thank you, Uncle."

"What are you doing?"

"Pricing."

"I thought the builder did that."

"No, this is a final account. We always price final accounts and then let the builder agree or disagree with our figures. It pays to play from strength with builders whenever you can."

"You mean that's a final account, that thing nearly two inches thick. How long has that taken to prepare?"

"On and off about two years, but we could have done it more quickly if it hadn't been put aside. We're pretty rushed these days with new work, you know."

"Do you mean you can't find a quicker way to pay a builder than that? It's as bad as post-war credits. I suppose when the builder rings up you tell him he'll get his money when he's sixty-three."

"This particular builder doesn't seem to want his money—something to do with income tax—it's the client who wants to settle his account quickly. A pity, because I had just begun some drains on a new——"

"Why don't you find a quicker way of paying a chap than by writing a book for him?"

"We have to be accurate, Uncle, and this is the only way. Quantity surveying is a complicated business. A job worth doing is worth doing well, you know——"

"Nonsense, George, a job like that is worth doing as well as the parties want it done. I bet neither the builder nor the client would care about accuracy within a few pounds if there was a chance of a quick settlement."

"This builder would for a start, he'd have to pay too much tax."

"That's his lookout, boy. When that builder's worried about paying too much tax he'll get out of business. Since when were quantity surveyors meant to favour builders anyway?" He paused and picked up a well-bound bill of quantities weighing about as much as a brick.

"What's this?"

"That's the priced bill of quantities which we prepared and which the builder tendered on."

"Is it just. I must have a look at this."

He took the bill back to his chair and studied it. He marked several pages with spills which he took from a vase on the 1936 Spec. tiled fireplace surround. After ten minutes he returned to the table.

"George, can I ask you a few questions about this?"

"Certainly."

"First, why do you have a bill of quantities at all?"

"Primarily to give builders a common basis for tendering."

"Yes, I can see that. So you might say you exist because builders want you?"

"Ye—es."

"But do builders want every bit of this rubbish in here?"

"Every bit of it, Uncle."

"Couldn't you cut some of it out or roll some of the items together?"

"No, we must give the builder what he wants. There is quite a demand for simplifying measurement today, but I don't agree with it. I think we should measure everything we can that will help the builder to tender. The builder is our client, not the man who pays us, and it is terribly important to bear that in mind."

"That is all very well, but it seems to me that the more you write in the bill the more there is for the builder to put prices against. Besides, the language is a bit archaic, isn't it? I'm not suggesting Chaucer would have enjoyed a bill of quantities, but he would certainly have had no difficulty in reading one. What's this for instance? Labour plumbing to groin——?"

"Quoin, Uncle."

"Quoin then, Labour plumbing to quoin, £28 3s 6d. What's that for?"

"It's an item to enable the builder to allow for getting his angles vertical in brickwork, picking the best bricks, all that sort of thing."

"All that sort of thing. You mean he wouldn't get his angles straight if you didn't measure that? Rubbish. That's just a way of adding £28 3s 6d to the cost of the building. Pays the instalments on the builder's Bentley. Now I can understand you measuring walls and concrete and scaffolding and——"

"Funny you should say that, Uncle. We don't normally measure scaffolding, the builder has to work that out for himself."

"You don't measure scaffolding, yet you waste your

time measuring that plumbing thing! You must be mad. Those builders are taking you for a ride, son. Still, we'll forget that for a moment, there's something else here in the glazier section. Two pages of glass 'exceeding two but not exceeding four feet super, exceeding four but not exceeding six feet super', and so on. What's the point of that?"

"That's because the builder has to pay more for larger sheets of glass."

"But his prices are all the same. Look—2s 1½d."

"That just happens to be the case with this builder, Uncle. There is no doubt that the bigger the piece of glass the more the builder has to pay for it, and because of this we must measure accordingly."

"Why not put all the glass in together and get him to give an average price?"

"Because he wouldn't know the proportion of differing sizes."

"He could look at the drawings."

"Drawings! He doesn't get the drawings when he tenders, only when he starts work."

"You mean his only help when he is trying to price a job is this bill of quantities?"

"Yes, that's why we must be so thorough."

"Good God, I can't believe it. In that case then, I agree you have to measure plumbing quoins and every different piece of glass, but that makes it all the more important to abbreviate your descriptions. Why not say 32oz clear sheet glass 2-4, ditto 4-6. That would save you a bit of time, especially as you appear to have to write everything out again in that final account thing you've got."

"Because we must make it quite clear to the builder what we mean. He may not understand abbreviations."

"If he's clever enough to price scaffolding for a whole building by reading a bill of quantities, I'm sure he'll soon get the hang of a few abbreviations. No, son, you're a mug. You want to stand back one day and take a look at yourself. You'll get a surprise."

"Oh, Uncle, you don't understand."

"Perhaps I don't, George, but perhaps you don't either. Just one more thing. Have you ever thought of the metric system?"

"Yes, but it will be a long time before the building industry takes to it. It will mean so many changes."

"You speak like my dear old dad. He used to say they'd never introduce the metric system into England because of the cost of changing round all the buses to run on the other side of the road. The metric system would be a boon to you, lad. 'Ave you ever thought (Uncle Leonard's h's often deserted him when he warmed to a subject) that under the metric system you could measure from a drawing of any scale with just one scale, thirty centimetres long. You would have none of this yards, feet and inches, no more pounds, shillings and pence, hundredweights, quarters, pounds. Think how much easier your life would be. Fewer mistakes, too, I don't wonder."

"Yes, Uncle, it will come one day when there is a demand for it. Now I really must get on with this pricing."

"George, it'll come one day twenty years after there's a demand for it, like everything else on this island. But I won't detain you, I can see you are straining to start being accurate again, but just answer one last thing. What do architects think of you quantity surveyors?"

"Well, they are always polite, I think they take a course in politeness at these architectural schools, but one architect did once call me a tasteless robot. In fun, of course, he didn't mean it. Really they have a great admiration for the work we do and they frequently say so."

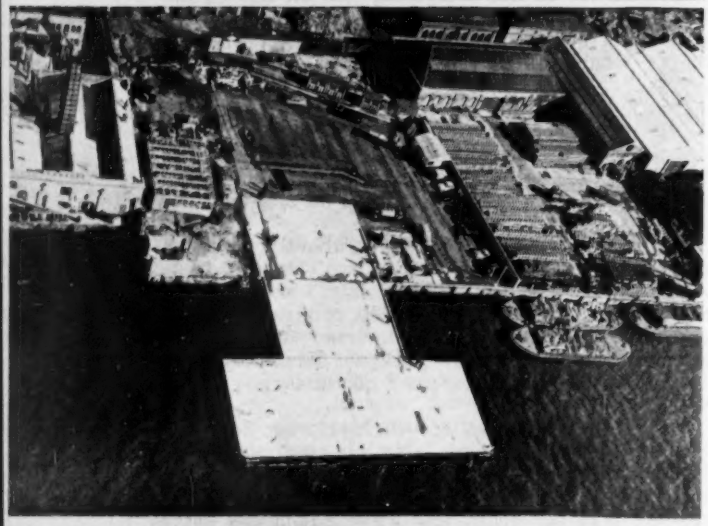
"So they should. I can see that without your bill of quantities they would have to produce plenty of drawings and specifications pretty quickly. Which makes me wonder if, even with your bills of quantities, they always have everything ready in time. I've not met an artist yet who could work to the clock. But I said I wouldn't ask any more questions, you get on with your pricing."

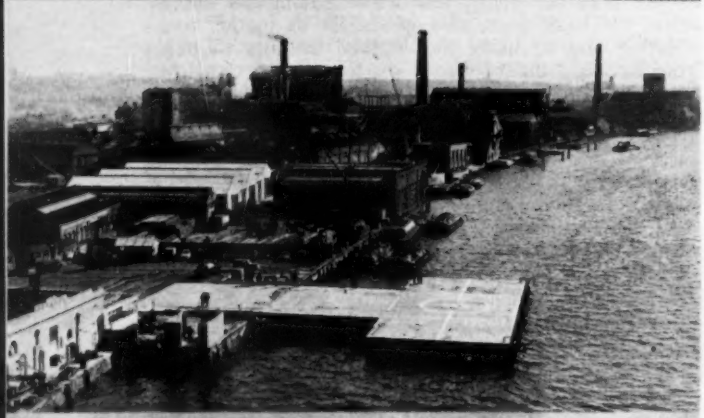
But George did not get on with his pricing. Somehow he did not feel like work after his chat with Uncle Leonard. He watched "Sportsview" instead. Then he made the cocoa (eating a little more of the sugary mixture than he usually did before adding the milk), locked the back door, said goodnight to mother and to father and to uncle and walked upstairs to bed. From between the bookends on the landing window cill—the window with the coloured glass—he chose a book. Not Willis, not even Dickens or Shakespeare or Oliver Goldsmith but—James Hadley Chase.

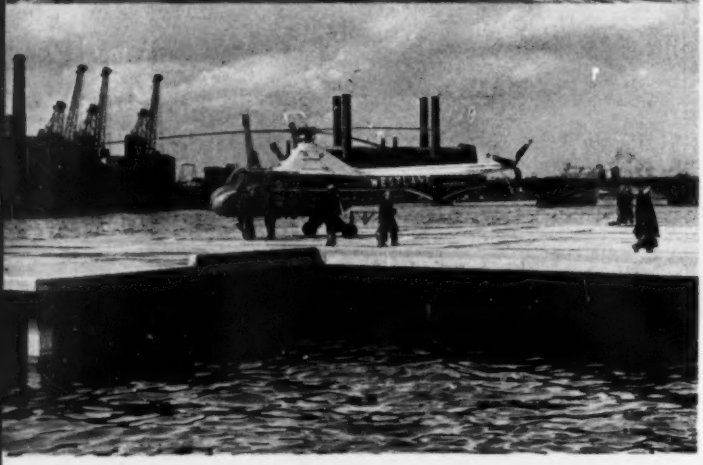
THE NEW HOLLOW CLAY BRICK

A group of four bungalows, designed by F. B. Pooley, F.R.I.B.A., consultant architect to Aylesbury Borough Council, is the first building in this country to be constructed with the new type of hollow clay brick. The new brick, designed and developed by the Building Research Station, occupies the space of two standard bricks and is here seen being laid to form a cavity wall. Two firms have so far co-operated in the development. The Western Counties Brick Company have manufactured an earlier design of horizontally perforated brick and have built an office block with it. The Sussex and Dorking Brick Company Ltd. have manufactured enough of the vertically perforated bricks for the bungalows at Aylesbury

NEWS







The Late C. H. Aslin

We regret to record the death of Charles Herbert Aslin, C.B.E., who was Hertford County Architect until last year, and was a pioneer in the design and building of prefabricated schools. He died in hospital, at Hertford, on Saturday. He was 65. Mr. Aslin was president of the R.I.B.A. in 1954 and 1955. A note will appear in next week's issue.

Sir George Pepler

We also regret to record the death of Sir George Pepler, at the age of 77. Sir George was the nation's technical planning chief from 1919 onwards, and was one of the founders of the Town Planning Institute. He was knighted in 1948. A note will appear in next week's issue.

R.I.B.A. Exemption for Hammersmith

The full-time courses in architecture of the Hammersmith College of Art and Building have been recognized for exemption from the R.I.B.A. examinations, with the exception of Part III of the final examination in professional practice. The architectural school is organized so that students gain experience in the departments of art, building, structural engineering and surveying and building trades.

£45 Million Building Programme

A building programme of £15 million for technical education will be approved for 1961-62, and programmes for 1962-63 and 1963-64 will be set provisionally at the same figure. This was stated by Mr. Geoffrey Lloyd, Minister of Education, in a circular to local education authorities; it forms part of the new capital investment programme, to cost £54 million, announced last week.

The three-year programme will include improvement of existing facilities for teaching, social, recreational and residential purposes. In 1962-64 special priority is proposed for buildings for commercial education, and there will be some capital expenditure on art education. Details of the 1961-62 building programme will be given to local education authorities as soon as possible.

County Hall Completion

A scheme for the extension of the south block of County Hall on Westminster Bridge Road was submitted to the L.C.C. at the council meeting yesterday. The scheme, which has been approved by the Establishments Committee, will cost £395,300 and will accommodate about 312 staff and a restaurant for J. Lyons & Co. Ltd. The work will be spread over four years. The general line and elevational treatment of the extension will conform with that of the existing building which has frontages to York Road and Westminster Bridge Road.

The Westland Heliport at Battersea, London, will be opened tomorrow. The pictures show (top) the scale of the scheme in relation to the riverside and bridges; plan, with land approaches, car park, etc.; the landing platform and riverside scene; and the scale compared with a helicopter. The scheme is experimental, to discover the requirements for a proper heliport in the future. Westland Aircraft Ltd. will operate it for six years. The scheme was designed by Lewis and Duvivier in association with H. J. B. Harding, consulting engineer; architect for the buildings, Caroline Oboussier; main contractors, W. and C. French Ltd.; contractors for the buildings, Simms, Sons and Cooke Ltd. Pictures by courtesy of "Flight"

The main courtyard will also be improved at a cost of £48,400 providing additional parking space for 100 cars and better traffic circulation. There will be a fountain in the centre of the courtyard facing the main entrance to the County Hall.

Accommodation will temporarily be required for staff displaced by these works and the repair of war damage at County Hall and the Council is taking a seven-year lease of three floors of offices at South Bank House, Black Prince Road, Lambeth, at a rental of £8,250 a year, exclusive.

Seven More Planners for the L.C.C.

The L.C.C. Establishment Committee recommended the strengthening of the staff of the planning division of the architects' department by seven planning officers and seven technical and two clerical staff to speed work on the increasing number of applications under the Town and Country Planning Acts and their civic design aspects. The cost will be £9,000 this year, rising to £14,475 a year.

Appointments

Mr. H. R. Savage, M.C., has been appointed principal private secretary to Mr. Henry Brooke, Minister of Housing and Local Government and Minister for Welsh Affairs, in succession to Mr. R. O. C. Winkler, who has been promoted.

Mr. P. H. Bates, F.I.O.B. has been elected president of the Builders' Clerks Benevolent Institution.

Mr. John Clifford Duckworth became managing director of the National Research Development Corporation at the beginning of this month.

Mr. Dennis Hennessey has been appointed by the Corporation to a new post of deputy managing director.

The functions of the Corporation are to develop and exploit for commercial use inventions of public importance which are not being developed by industry. It may also promote or assist research which is likely to lead to an important invention capable of practical use.

British Scientific Attache in Moscow

Mr. D. A. Senior, M.A., A.M.I.E.E., has been appointed to the newly created post of scientific attaché to the British Embassy in Moscow. He will advise the British Ambassador (Sir Patrick Reilly) on scientific matters and report on Soviet scientific and technical development in the civil field.

Edinburgh A.A.

Office bearers of the Edinburgh Architectural Association elected at the a.g.m. are: president-elect, Mr. George H. Lawrence; past-president, Mr. J. A. M. Mottram; vice-presidents, Ralph Cowan, Peter S. Ferguson and Alan Reiach.

L.M.B.A. Visit to Denmark

Twelve members of the L.M.B.A.'s North-Eastern Area, under the leadership of the chairman, Mr. W. E. Smith, are visiting Denmark at the end of this month. The visit, is being arranged through the Danish Federation of Master Builders, and Mr. P. A. A. Gatehouse, secretary of the area, is accompanying the party.

L.M.B.A. Cricket Club

The L.M.B.A. Cricket Club opens the season on May 12 with a match against the B.I.D. at Bromley. Its other matches for the year are against the R.I.B.A. on May 27, at Wimbledon, the Blue Circle on June 12, at Bromley, the L.C.C. Architects on June 30, at Earlsfield and the R.I.C.S. on September 2, at Earlsfield. B. J. Garrett is again captain and C. H. P. Trollope, vice-captain.

The Living Town

A symposium on urban renewal, entitled "The Living Town", will be held at the R.I.B.A. on Friday, May 22, beginning at 10 a.m., under the chairmanship of Professor Sir William Holford. The speakers will be Hubert Bennett, the Hon. Lionel Brett, Sir Hugh Casson, Peter Chamberlin, Percy Johnson-Marshall, Arthur Ling, Professor Robert Matthew, David Percival and Richard Edmonds (chairman of the town planning committee of the L.C.C.). Tickets (£1 each) cover admission, a copy of the printed report and coffee and tea. Application forms are available from the R.I.B.A. at 66 Portland Place: envelopes should be marked "Symposium—The Living Town". An exhibition on the same subject, organized by the Society for the Promotion of Urban Renewal in collaboration with the R.I.B.A. and the Civic Trust, will remain on view until May 27.

Course on Road Construction

A free two-day training course on road construction with particular emphasis on dry lean concrete bases, has been arranged by the Cement and Concrete Association, at the County Buildings, Inverness, on May 5 to 6. A number of well-known engineers have been invited to lecture on the course in addition to members of the association's technical staff. The course also includes a full-scale demonstration of dry lean concrete base construction which has been arranged in conjunction with the Scottish Home Department and Inverness County Council. Applications to attend should be sent to: Peter Russell, Esq., B.SC., A.M.I.C.E., M.INST.H.E., Cement & Concrete Association, 2 Rutland Square, Edinburgh 1.

Professional Announcements

Charles Blake, A.R.I.B.A., chartered architect, has commenced private practice in association with J. E. Knapman, L-A.M.T.P.I., town planning consultant, and S. Jampel, M.SC., D.I.C., A.M.I.C.E., consulting civil engineer, at Phoenix Chambers, 553 Babbacombe Road, Torquay, Devon (Torquay 25666/7).

Manning & Clamp, chartered architects, have moved their Richmond office to 19 The Green, Richmond, Surrey (telephone RIChmond 2341/2).

Design Research Unit has opened an office at Lombard House, 3 Higham Place, Newcastle upon Tyne (telephone 61-0051). John D. Cochrane, M.S.I.A., D.A.(EDIN.), will be designer-in-charge.

Tooley & Foster, chartered architects, have opened an office at 38 Great Portland Street, London, W.1 (telephone MUS 3414). Representatives will be seen only at their main office at Midland Bank Chambers, Buckhurst Hill.

D. Tavill, of Andrews & Niegeman, architects, announces that from May 1, 1959, their address will be: United House (10th floor), Heerengracht, Cape Town, South Africa.

Law and Administration

The Central Land Board

The Central Land Board was established under the *Town and Country Planning Act, 1947*, to assess and approve claims on the £300 million fund for loss of development values which were taken away from owners by that Act, and to collect development charges. When that system was ended by the *Town and Country Planning Act, 1953 and 1954*, the Central Land Board was kept temporarily in being to deal with the backlog of compensation claims which arose under the latter Act. It was always envisaged that it would be wound-up before long. The Minister of Housing and the Secretary of State

have decided that the appropriate moment has come and with effect from April 1 all matters within the ambit of the Board are to be dealt with by the Ministry of Housing or the Department of Health for Scotland respectively, and the Board wound up.

The Ministers concerned, when expressing in Parliament their appreciation of the Board's services, were making more than a formal recognition. For the Board in its lifetime, while not the swiftest official body in operation, certainly earned the regard of those who dealt with it in all other respects.

Development Plans

The Minister of Housing and Local Government has announced his approval of the Nottinghamshire Development Plan. The plan was submitted to the Minister in June, 1952, and the inquiry was held in April, 1954. This approval brings the number of plans now approved to 131. There remain approximately 24 plans yet to be approved.

Water, Sewerage and Derelict Site Grants

The main purpose of the *Distribution of Industry Act, 1945*, was to provide financial assistance to industrial firms either in or proposing to go to development areas. In addition arrangements were made to give financial help to local authorities in those areas to improve the basic services there. Provision was also made to finance the improvement of derelict sites in the development areas.

Grants under the Act for these purposes are discussed in *Circular 22/59* issued by the Ministry of Housing and Local Government. In development areas, the circular observes, and "where there is *a high level of unemployment* the local authority may be able to show that it could not reasonably meet from its own resources the full cost of providing water and sewerage services for a substantial new industrial development". Where this is the case the Minister is prepared to consider an application for a grant under Section 3 of the 1945 Act. The circular points out, however, that the need for financial assistance for such schemes should have been minimized by the rate deficiency grants under the *Local Government Act, 1958*.

The Ministry is more encouraging about applications for grants to help carry out work on derelict sites and say that "the Government hope that local authorities will take quick action and submit schemes" for this kind of work "at the earliest possible date" to the appropriate Regional Controller of the Board of Trade. The conditions for such a grant are set out in the circular, and emphasis is laid upon the fact that grants under the 1945 Act are for dealing with derelict sites and are *to provide money only*. The Act does *not* confer power either to acquire such land or to do work on it. These powers are to be found in other statutes, notably the Town and Country Planning Acts.

In Parliament

Lord's Second Reading for Planning Bill

The Town and Country Planning Bill, which aims to put compensation for compulsory acquisition of land on a market value basis, has been given a second reading in the House of Lords.

The Lord Chancellor, Viscount Kilmuir, explaining its provisions, said the present system provided a real grievance on the fringes of growing towns. In some cases the market value could be several times the price payable on compulsory purchase. Local authorities had sometimes been impeded in choosing the most appropriate sites because they were unwilling to cause injustice.

By and large, land purchasers would now not pay development value unless they were certain they would be able to develop the land, and they could not be certain of this unless planning permission had been given. Development values, therefore, depended upon planning permissions.

The Government's intention was to maintain and improve planning control, making it more discriminating, more effective—though not more burdensome—and, if possible, a lot quicker.

An opposition peer, Lord Silkin, said he intended later to put forward an idea of the Royal Institute of British Architects. Their suggestion was that the local planning authority should still be required to be responsible for compensation on the existing basis and that the Government should recoup them for the excess. If this were done, said Lord Silkin, "the burden would fall where it should".

He also complained that the Lords had not been given sufficient time to consider the Bill and put forward detailed amendments. They had been told they had to get it through before Whitsun.

Further criticism of the Bill came from Lord Chorley, who said he agreed with one description of it as an "anti-planning Bill". It put the clock back to 1919. (April 14.)

Clearance of Prefabs

The Minister of Works, Mr. Hugh Molson, was asked in the Commons what arrangements had been made to clear prefabricated houses, which have been standing empty for some time, from sites in Walker, Newcastle upon Tyne, to enable the local authority to proceed with its redevelopment programme.

In a written reply, the Minister stated: "Clearance of the first batch of 42 prefabricated bungalows is going on now and should be completed well before the local authority's target date of June 30. Details of a second batch of 36 bungalows were received by my department from the local authority on April 1 and tenders for the clearance are being invited." (April 14.)

Temple of Mithras

The Temple of Mithras remains are expected to be re-erected next year so that it can be seen by the public. This was stated by the Minister of Works. In a written Parliamentary reply, he recalled that the owners of the site on which the Temple was found had undertaken to re-erect the remains in a courtyard of their new building. (April 14.)

Coming Events

Building Centre

April 29 at 12.45 p.m. Film. "Rolled Zinc in Architecture", by the Zinc Development Association. At the Building Centre.

Institute of Landscape Architects

April 23 at 6.15 p.m. "Men and the Landscape", by Edward Hyams and Frank Clark. At 66 Portland Place, London, W.1.

Cement and Concrete Association

April 23 at 6 p.m. "Gatwick Airport Structures", by F. S. Snow, C.B.E. and E. V. Finn. At 11 Upper Belgrave Street, S.W.1.

April 30 at 6 p.m. "Precasting in Concrete Construction", by J. F. Greining, A.M.I.C.E., and R. Westbrook, A.M.I.STRUCT.E. New School of Engineering, University of Bristol.

Incorporated Association of Architects and Surveyors

April 25 at 10.30 a.m. Annual general meeting. At 29 Belgrave Square, London, S.W.1.

Royal Institute of British Architects

April 27 at 6 p.m. "Wren's Drawings for St. Paul's: A Re-Assessment", by Sir John Summerson. At 66 Portland Place, W.1.

Bristol Building Centre Limited

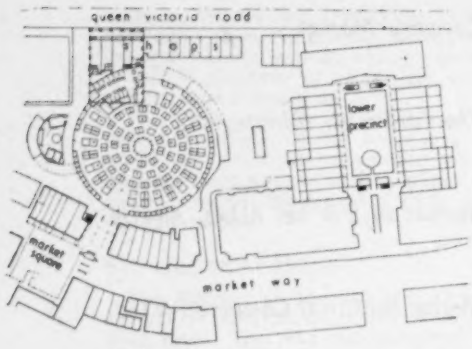
April 28 at 1.30 p.m. Film. "The Plywood Story", Ministry of Works Library. At Stonebridge House, Colston Avenue, Bristol, 1.

SHOPPING CENTRES

In this feature we illustrate five shopping centres. The circular retail market at Coventry deals with the problem of the small trader, combining market with car park. It is interesting to compare it with the circular market at Sidi bel Abbes, Algeria. The Morley Industrial Co-operative Society Ltd. fulfills a demand for shopping under one roof. Finally we illustrate the large neighbourhood shopping centre at The Fordrough, Birmingham, and the small shopping centre at Gosforth, Newcastle.

- *Coventry Market*
- *The Fordrough, Birmingham*
- *Market in Sidi bel Abbes, Algeria*
- *Morley Industrial Co-operative Ltd.*
- *Shopping Parade, Newcastle*

The Town Square, focal point of the all-pedestrian shopping precinct of Stevenage New Town. Chief Architect: Leonard G. Vincent



SITE PLAN

The strong geometry of the elevated ramp and circular plan-form lends a mobile and spacial character that is quite in keeping with the nature of the scheme. A converted building on the far side of the market is brought into the composition, with the new clock-tower as a dominant
Photos: Henk Snoek

COVERED MARKET AT COVENTRY

FOR COVENTRY CITY CORPORATION
City Architect: ARTHUR LING
Principal Architect: DOUGLAS BEATON
Senior Group Architect: KENNETH BRADLEY

A NOVEL and enterprising addition to Coventry's well-known shopping precincts is this new under-cover market. The market is the largest scheme of its kind to be built since the war, and is important from a town planning aspect, since it will solve the problem of the small trader just as the flatted factory solves the problem of the small manufacturer. Whilst the development preserves a traditional form of shopping and brings it into line with modern standards of construction, amenity and service, the decision to combine the market with a central car-parking scheme considerably enhances the design. Uniting the two schemes has produced a three-dimensional or spatial result in harmony with a modern city, which, taken singly, they would not possess. The circular plan form and the elevated curving ramp accentuate this spatial aspect of the design. On the west side of the market an existing building has been converted and brought into the architectural composition. The lift shaft of this building has been extended upwards to form a clock tower as a dominant in the design, replacing the old market hall clocktower, which was demolished after the war.

Planning

The market hall accommodates stallholders from the Barracks and Rex Markets which it replaces, and provides further additional trading facilities. A circular plan was adopted as the best means of achieving access for shoppers at several points around the perimeter, and a concentrated lay-out of stalls within, so that shoppers are encouraged to circulate rather than go directly to their objectives.

This explains the layout of the stalls as a series of rings rather than segmental blocks.

The hall is 276ft in diameter and 15ft high internally, and contains 160 island stalls arranged in groups of two or four units in concentric rings. There are also 40 one-sided "shop stalls" set into the perimeter wall, of which sixteen face outwards, thus retaining something of the open-air tradition of market trading. The main ways into the market are from Market Way, through entrances at regular intervals round the perimeter, and from Queen Victoria Road.

A fall in levels made it feasible to include a basement on the western half of the site providing 78 small storage compartments for stallholders and various services installations. Access into this basement for incoming goods is by a ramped subway (with skid resistant surface) approached from Queen Victoria Road and Rover Road, while vertical circulation between basement and market is by four lifts and two staircases.

At the centre of the market, inside the 35ft diameter inner ring of columns, space is provided for customers to sit and rest away from the main circulation routes. Another rest area is provided on the "island site" to the south side of the market, including an open-air tea bar and a children's playground.

On the ground floor of the converted Victorian buildings is a fish market and fourteen shops. Nearby are two meat shops, grocery shop and two tea bars. All these have forced extract ventilation.

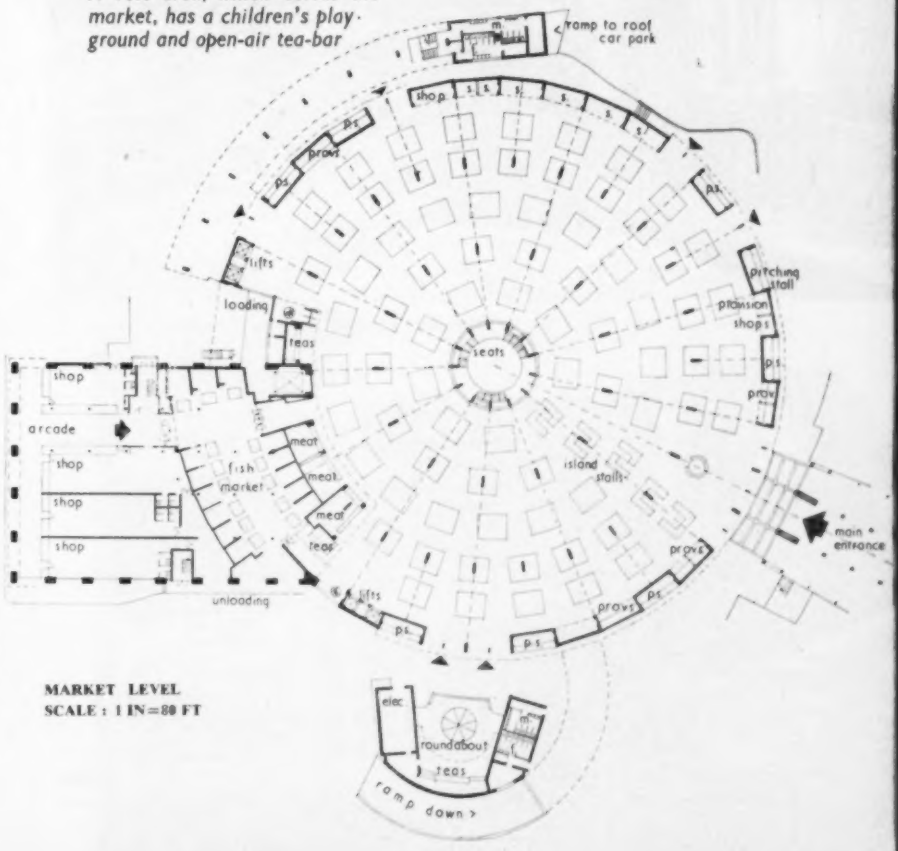
Stalls and Shops

The island stalls have been designed as the traditional "market table" on which the trader can display his goods and store his current stock, while their height has been kept down to permit, as far as the tenants' displays will allow, long views through the market in all directions. The trader can secure his stall at night by raising side flaps, sliding boards into horizontal channels and locking these into position. The perimeter shops, facing into the market, and the pitching stalls, facing outwards, have been designed as open-fronted shops with counters where necessary, and full-height rolling steel shutters for lock-up purposes.

Roof Car Park

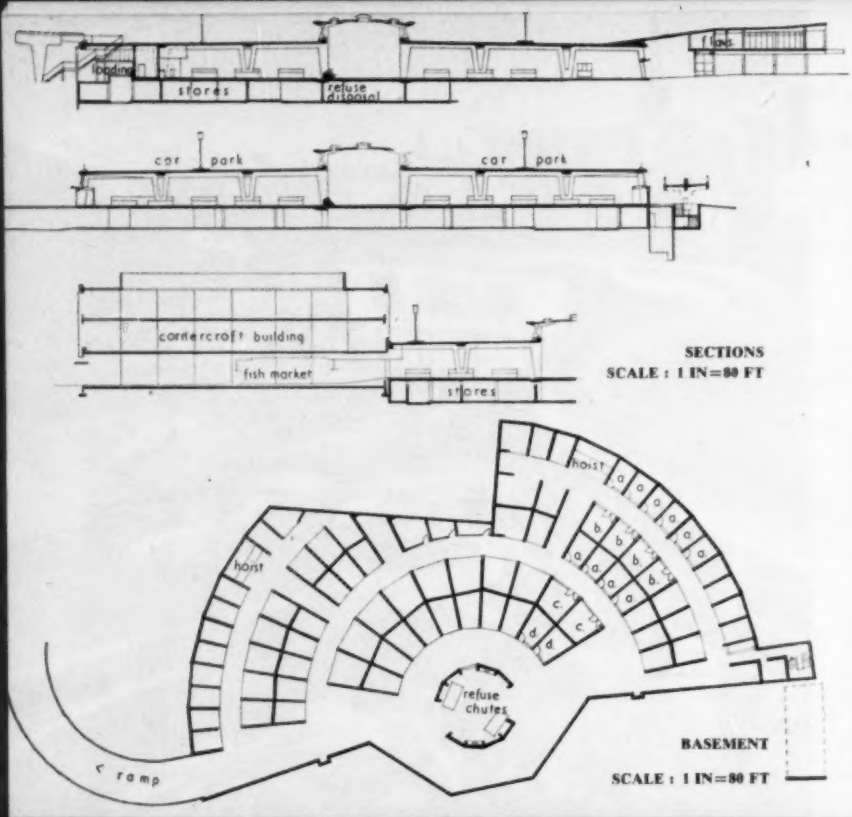
Space for 200 cars is provided on the market roof, approached by ramp from ground level. This ramp will also join eventually with a multi-level car park to be built between the market and the lower shopping precinct. The car park is linked by a bridge to the roof of the Market Way shops on which further parking space is provided. In the next stage of the scheme this bridge will be extended to give access to another multi-storey car park and to roof car parks. Two

A rest area, which serves the market, has a children's playground and open-air tea-bar



MARKET LEVEL
SCALE : 1 IN = 80 FT

COVENTRY MARKET



staircases are provided for connection between ground level and the roof car park. The ramp and the bridge both incorporate in their structures automatic electrical heating elements ½in below the slab surface to prevent ice forming in cold weather.

Construction

The roof is supported on 13 radial frames, each of three bays with supporting open delta-shape columns and one exterior column of trapezoidal shape connected by a continuous rectangular beam. The frames are connected by concentric ring beams. In the peripheral bays intermediate cantilever frames provide additional support for the roof slab where spans are longest. The two-way reinforced roof slab, varying in thickness from 9in to 16in is capable of carrying a load of 100lb sq ft, representing the load of light vehicles. The structural concrete of the slab is designed to provide an adequate waterproof cover to the market without further treatment. It is finished with an integral topping of granite concrete, air entrained for frost resistance, and with an exposed aggregate finish to give a hard-wearing and skid-resistant surface. All expansion joints have been eliminated by designing and controlling the construction of the slab so as to absorb shrinkage and thermal movements.

Cost

The approximate cost of the retail market was £320,000. The cost of converting the Cornercroft building was £65,000, making a total cost of £385,000.

Structural Engineer:
N. R. RAYMAN

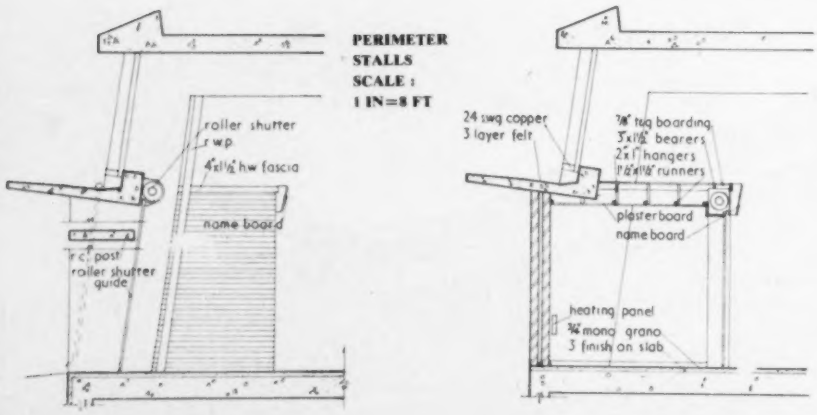
Consultant City Engineer:
GRANVILLE BERRY

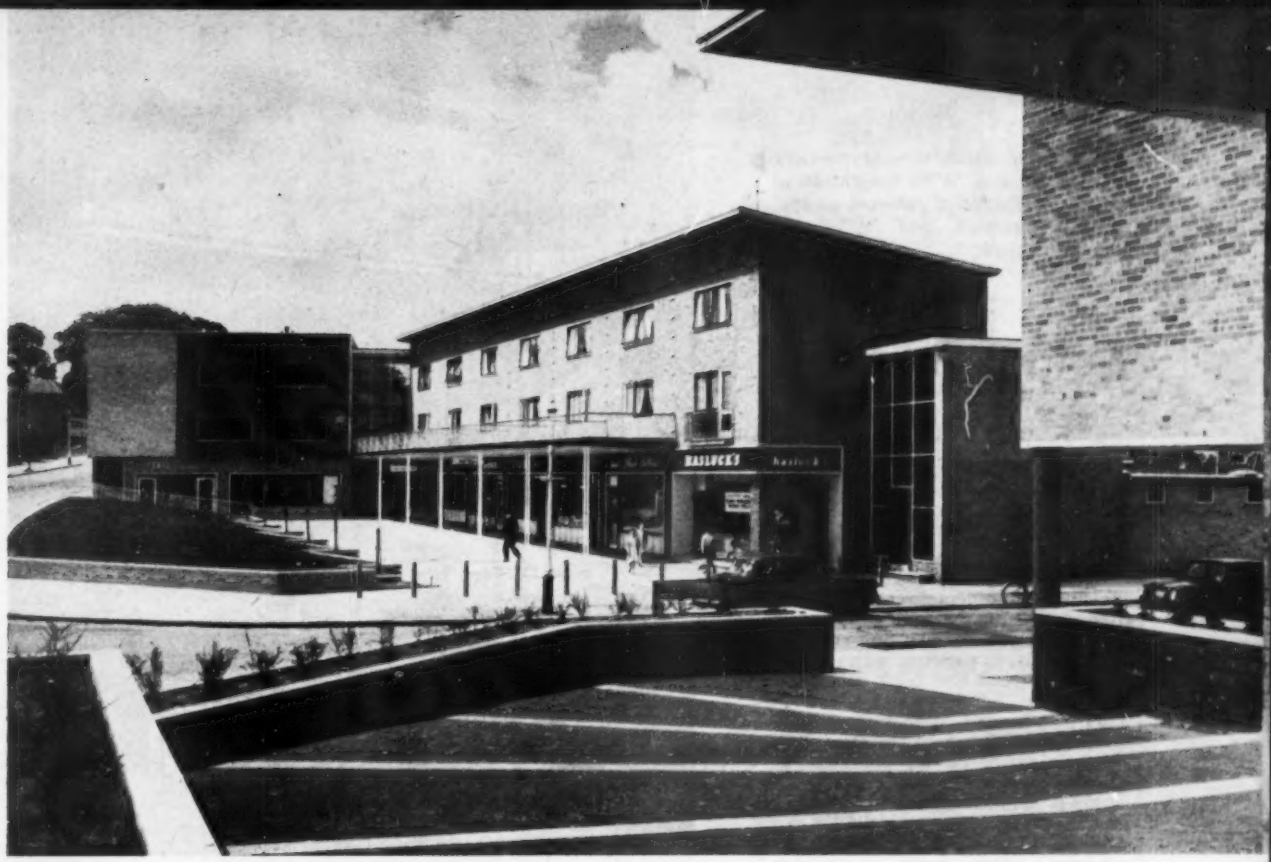
Electrical Engineer:
W. H. SHAW

General Contractors:
WILLIAM MOSS & SONS LTD.

Sub-contractors and suppliers:
Asphalt Roofing: Neuchatel Asphalt Co. Ltd. *Brass Gratings:* Comyn Ching Co. Ltd. *Cement Wall Glaze:* Modern Surfaces Ltd. *Clock Mechanism:* John Smith & Sons. *Concrete Waterproofer and Hardener:* George Lillington & Co. Ltd. *Cork Lettering:* London Industrial Art Ltd. *Electrical Work:* Lee Beesley & Co. Ltd. *Felt Roofing:* Wm. Briggs & Sons Ltd. *Glass-Concrete Lights:* J. A. King & Co. Ltd. *Glass Domes:* T. & W. Ide Ltd. *Goods Lift:* Express Lift Co. Ltd.; Pickerings Ltd. *Limpet Spray:* Turners Asbestos Cement Co. *Metal Grating and Cast Iron Goods:* Broads Manufacturing Co. Ltd. *Marble Slabbing:* W. H. Fraley. *Metal Windows:* Henry Hope & Sons Ltd. *Metalwork:* Bigwood Bros. (B'ham) Ltd.; Dixon Powner & Sons. *Neon Sign:* Ward & Co. Ltd. *Paints:* Stratacolour Cement Products Ltd. *Patent Glazing:* Glass (Coventry) Ltd. *Piling:* Simplex Concrete Piles Ltd. *Plumbing:* Daly & Son; J. C. Toogood Ltd. *Reconstructed Stonework:* Croft Granite Brick & Concrete Co. *Roller Shutters:* G. Brady & Co. Ltd. *Sign Boards:* Leonard Cook & Son Ltd. *Steel Clock Frame:* George Lister & Sons Ltd. *Steel Lockers:* W. A. Bawn & Co. Ltd. *Steel Reinforcement:* Square Grip Reinforcement Co. (Bristol) Ltd. *Suspended Ceilings:* Expanded Metal Co. Ltd. *Teak Sinks:* Walter Lawrence & Son Ltd. *Terrazzo and Mosaic :* Jaconello Ltd. *Uxbridge Flint Bricks:* Cape Building Products Ltd. *Ventilation System:* Bruce Bristow (Engs) Ltd.

Attendant's kiosk, and the "market table" stalls





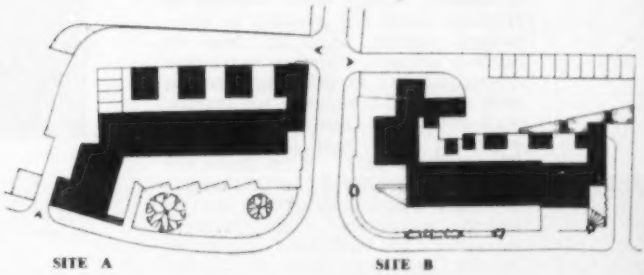
The shopping precinct is enclosed on three sides by the "L"-shaped plan of site "A" and the main block of site "B" which is set forward

THE FORDROUGH, BIRMINGHAM

Architect: LEONARD J. MULTON

In Association with: A. G. SHEPPARD FIDLER
Birmingham City Architect

Partner in Charge: REGINALD L. STONE

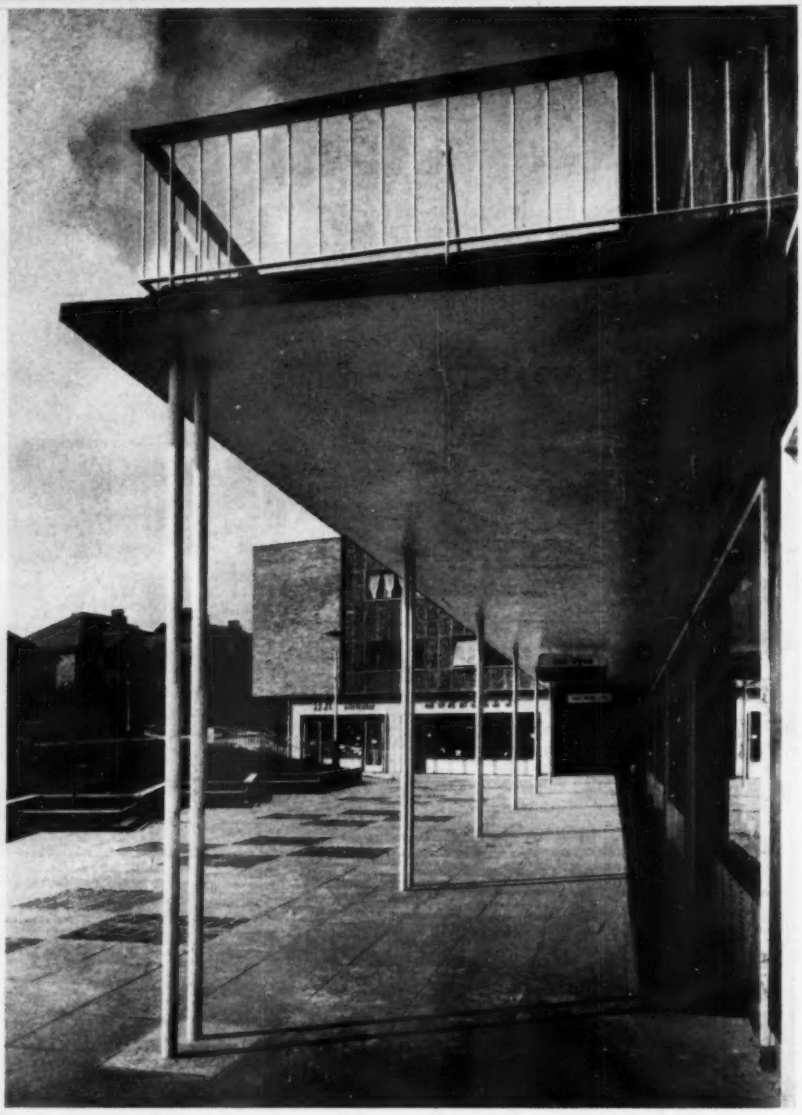


View from the west corner of site "A"

THESE shops and maisonnettes at The Fordrough, which were not featured in "Birmingham Rebuilds"—last week's issue, merit attention as one of the most successful shopping centre developments in the city's post-war rebuilding programme. The shops serve a new suburban residential area some six miles from the city centre, and are sited both sides of a "T" road junction.

Site "A", containing nine shops, was levelled behind the footpath and provided at the west end with a ramped access for perambulators and easy-going steps for pedestrians. Site "B", containing ten shops, had a ground slope which was too great to repeat this arrangement, so the block was built partially on the slope and topped up and levelled at the east end.

A feeling of sheltered and pleasant enclosure on site "A" is brought about by the combination of generous canopy, spacious forecourt, and "L"-shaped plan of the block



THE FORDROUGH

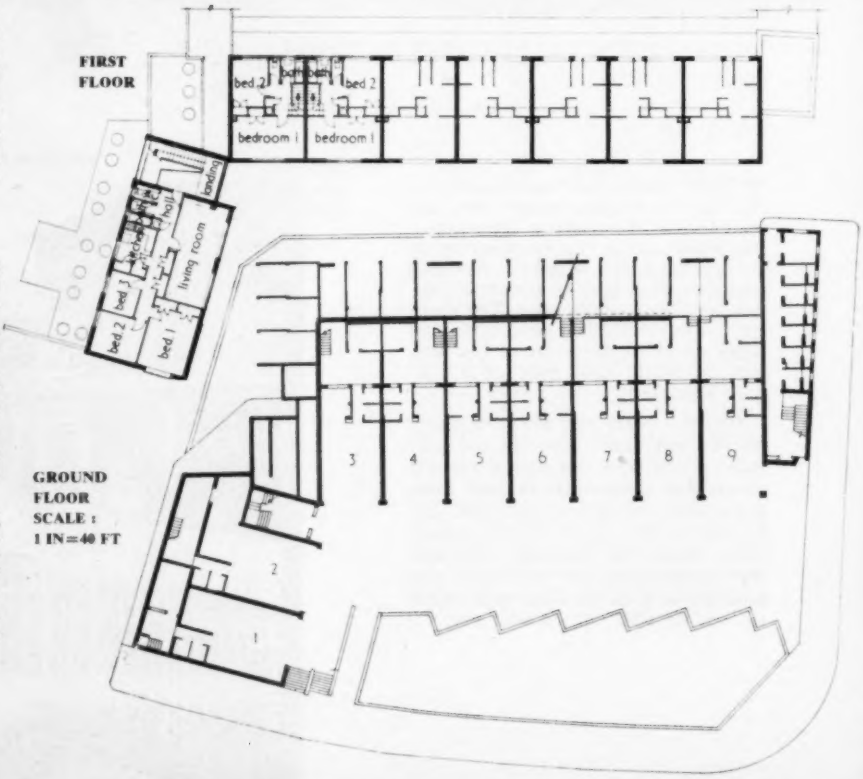
Design

The layout of forecourts, access, retaining walls and flower-boxes are important contributory features of the scheme, and were designed in detail at the outset. Considerable care was taken over the design of pavings, which are generally in red and buff concrete slabs in various patterns, with infilling panels of ribbed blue-brick paviors or red tarmac. Division strips are in York stone and miniature granite setts. Colour has been used to a considerable extent on the buildings, to help to give a cheerful atmosphere, which is appreciated by both traders and shoppers. The majority of the shops are protected by continuous canopies, which form a unifying feature of the total design. To achieve continuity in design, shop fronts have continuous fascias mainly in ribbed teak, but in special cases carried out in mosaic. Return walls to shops in Houldey Road are panelled in Marmatoni marble aggregate tiles in random colours. Window surrounds throughout are in pale-grey terrazzo with varnished mahogany sub-frames. Stall risers are faced with coloured patterned tiling built off plinths of Westmorland slate. Shop doors are either faced externally with Formica in bright contrasting colours, or varnished mahogany. Sign lettering throughout has been rigidly controlled by the architects, both as regards design and colour. Canopy signs were specially designed in stove enamelled Plymax, with applied plastic lettering.

Construction and Materials

All buildings have load-bearing brick walls, concrete ground floors and reinforced concrete first floors. Canopies are monolithic with the floors, supported on mild steel columns on site "A" and cantilevered on site "B". As a terminal feature, the canopy over the two shops at the east end of site "B" forms a continuous double curve. Canopies are weathered in asphalt where used as private balconies, and elsewhere finished in felt.

Second floors are boarded on timtimber joists. Flat roofs are formed of joists covered with Stramit. Monopitch roofs are of latticed timber trusses spanned with wood-wool slabs and weathered in felt. All gutters are concealed within the thickness of the



roof with the rain-water pipes placed at the rear of the building.

Public access stairways are formed of independent cantilevered pre-cast tread units, design as 2⅛ thick treads strengthened by a tapered rib to work with brick courses.

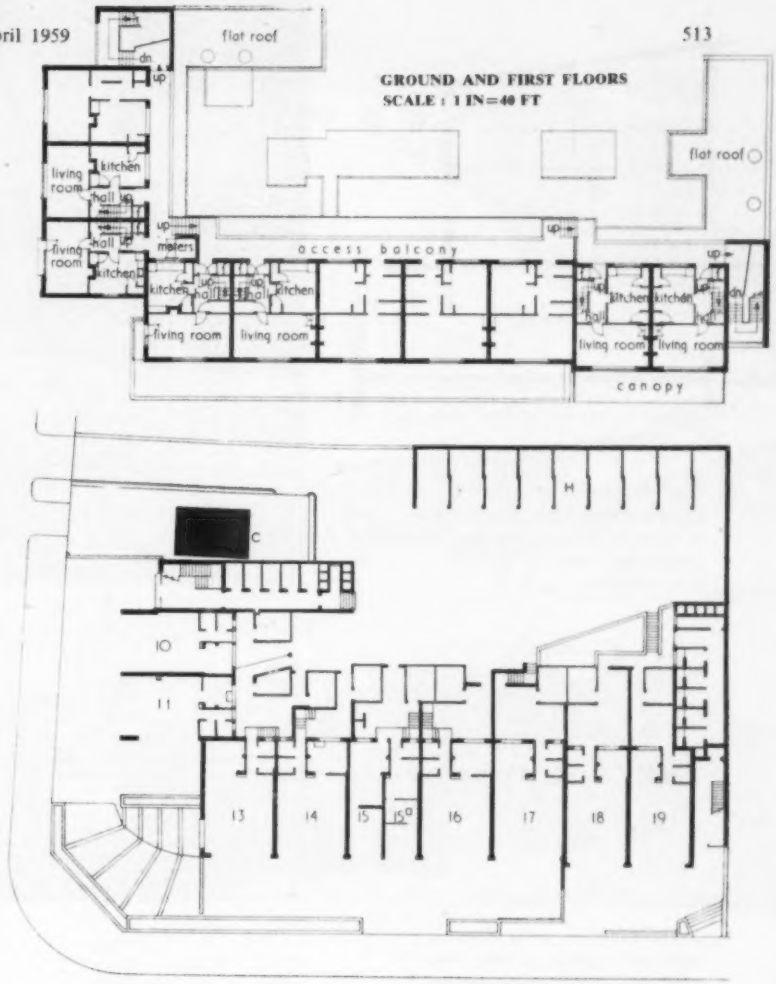
Individual units of the scheme have walls in 2⅛ bricks of contrasting colours, exposed aggregate panels and Tyrolean rendering. To give added interest to plain surfaces, patterned brickwork, with projecting headers of exceptionally contrasting colours, has been used in selected positions.

Services

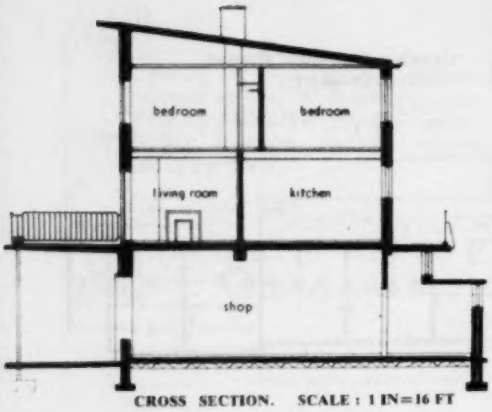
All shops are provided with gas, electricity and water services and telephone conduits. Each shop has internal lavatory accommodation and its own store and garage placed externally to the main blocks, and all goods deliveries are made from the service road at the rear. Access to maisonnettes is from an external balcony at the rear, served by staircases approached from the main frontages. Maisonnettes have gas and electric services, solid-fuel heating appliances with back boilers in living rooms, and storage tanks fitted with immersion heaters.

Cost

On the basis of the tender obtained in November, 1955, the cost per foot cube of the main structure is 4s, and for single-storey works 1s 8d. A further £10,700 was spent in laying-out service roads, forecourts, yards and fencing. These costs were affected by the site conditions and extensive excavations and deep foundations required.



The feeling of "precinct" or enclosure on site "B" is achieved principally by its relationship with site "A"



CROSS SECTION. SCALE : 1 IN=16 FT

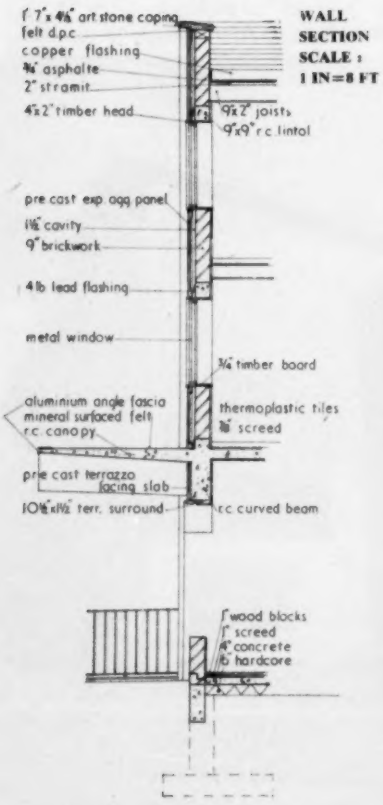
The forecourt of site "A" is sunk slightly below main pavement level and is approached via easy-going steps for pedestrians and a shallow ramp for perambulators

THE FORDROUGH

General Contractor:
GEORGE STUBBINGS LTD.

Sub-contractors and suppliers:

Architectural Metalwork: H. E. Breaker (Metalwork) Ltd. *Asphalting:* Birmingham Asphalte & Paving Co. Ltd. *Bricks:* Eastwood Sales; Blockleys Ltd.; London Brick Co. Ltd.; Himley Brick Co. Ltd. *Concrete Reinforcement:* G.K.N. Reinforcements Ltd. *Decorative Tiling:* Carter & Co. (London) Ltd. *Dome Lights:* Standard Patent Glazing Co. Ltd. *Exposed Concrete Panels, Reconstructed Stone, Pre-cast Stair Treads:* Croft Granite Co. Ltd. *Fascia Lettering and Signs:* Ward & Co. *Fireplaces:* Griffin Foundry Ltd. *Gas Installation:* West Midlands Gas Board. *Ironmongery:* Baldwins (Birmingham) Ltd. *Metal Windows:* Henry Hope & Sons Ltd.; John Gibbs Ltd. *Mono Pitch Roofs:* Broderick Insulated Structures Ltd. *Paint:* I.C.I. and Permoglaze. *Roller Shutters:* Macher & Platt Ltd. *Shop Fittings:* Lotus Ltd. *Slate Plinths:* W. H. Fraley & Son. *Terrazzo, Mosaic, Marmatoni Tiles:* Marbolino Co. Ltd. *Thermoplastic Tiling:* Marley Tile Co. Ltd. *Tree and Shrub Planting:* Blakedown Nurseries. *Wood Block Floors:* Hollis Bros. Ltd.



Shops and raised forecourt on site "B"

General view of the market, with the administration floor raised above the main entrance

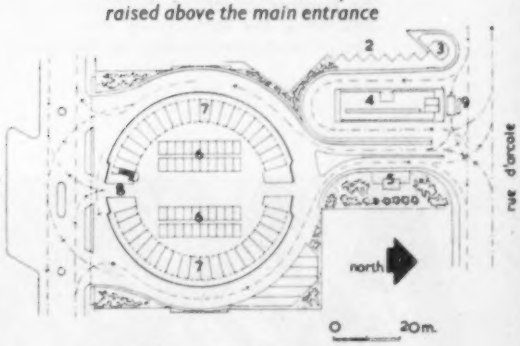
VEGETABLE MARKET, ALGERIA

Architects: MARCEL J. MAURI
Structural Engineers: PELNARD CONSIDERE AND CAQUOT

THE vegetable market, Sidi bel Abbes is a far cry from the Fordrough, Birmingham. It is the more surprising therefore to find, instead of the traditional construction usually associated with more primitive forms of labour, a building that is quite remarkable for the advanced techniques that have gone into its construction, techniques far above the general level in Great Britain. Of particular interest is the application of prefabricated unit members to a classical dome structure. The design programme required a covered space for the sale of vegetables, with 40 attendant storehouses. A circular plan of 60 metres diameter was adopted, the central part of which is covered by a hemispherical dome of 41 metres diameter, with the stores arranged on two floors radially around the circumference. An administration floor for supervision of the market is planned above the main entrance.

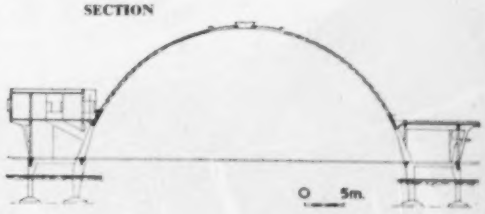
Construction

The use of pre-cast members and voussoirs eliminated the need for formwork. The dome is subdivided into 13 rows of 48 voussoirs, and an upper row of 24 voussoirs terminating at the ventilation skylight in the crown. Each voussoir consists of two frames of meridian and parallel ribs, with a double horizontal modulus, which makes it possible to counter support the meridian joints. The voussoirs are made of concrete, cast and vibrated on the site and placed in position by means of a crane and a special device for suspending and balancing each unit in its correct position. This device suspends the pieces by means of the tie-rods which pass through orifices in the central meridian rib of each voussoir, and L-shaped metal units which span this rib and grip the lower parallel as a base. The positioning of the 48 parts which form one parallel is carried out in eight



1. Suppliers stopping point. 2. Parking. 3. Inspection. 4. Fish. 5. Seats. 6. Stalls. 7. Warehouses. 8. Entrance. 9. Weighbridge.

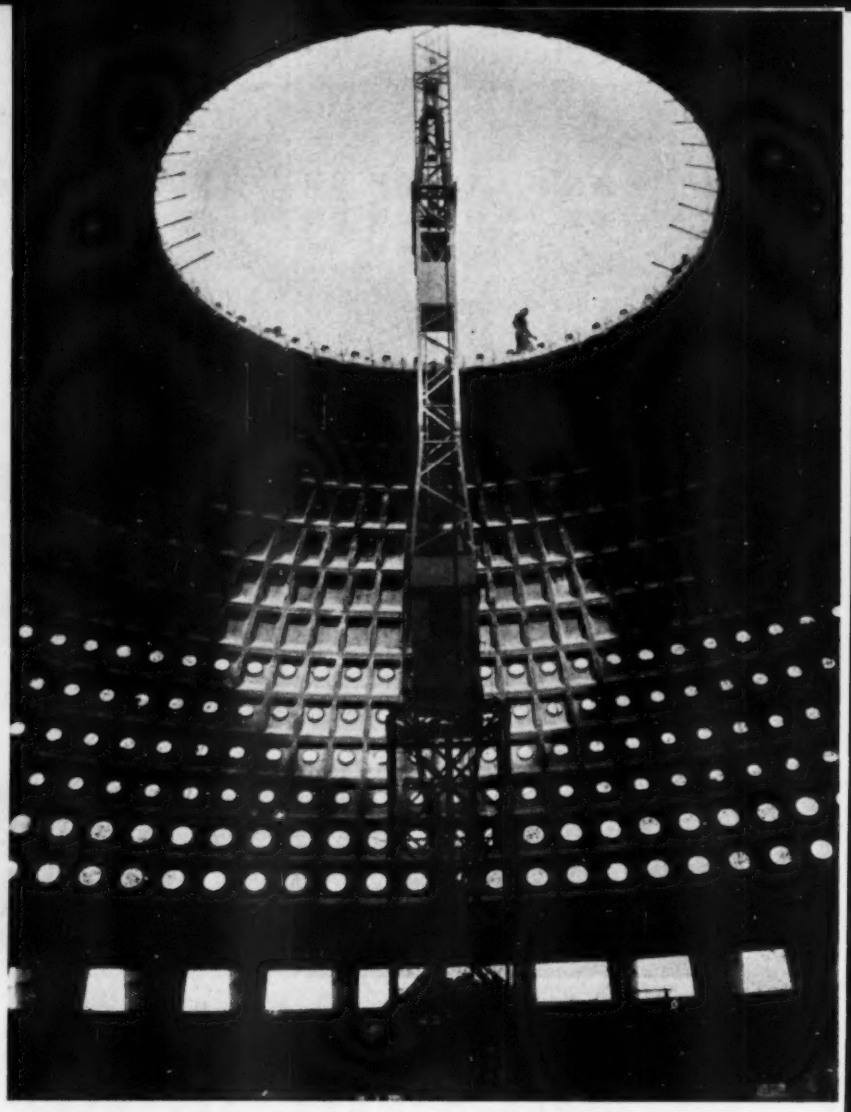
CROSS SECTION



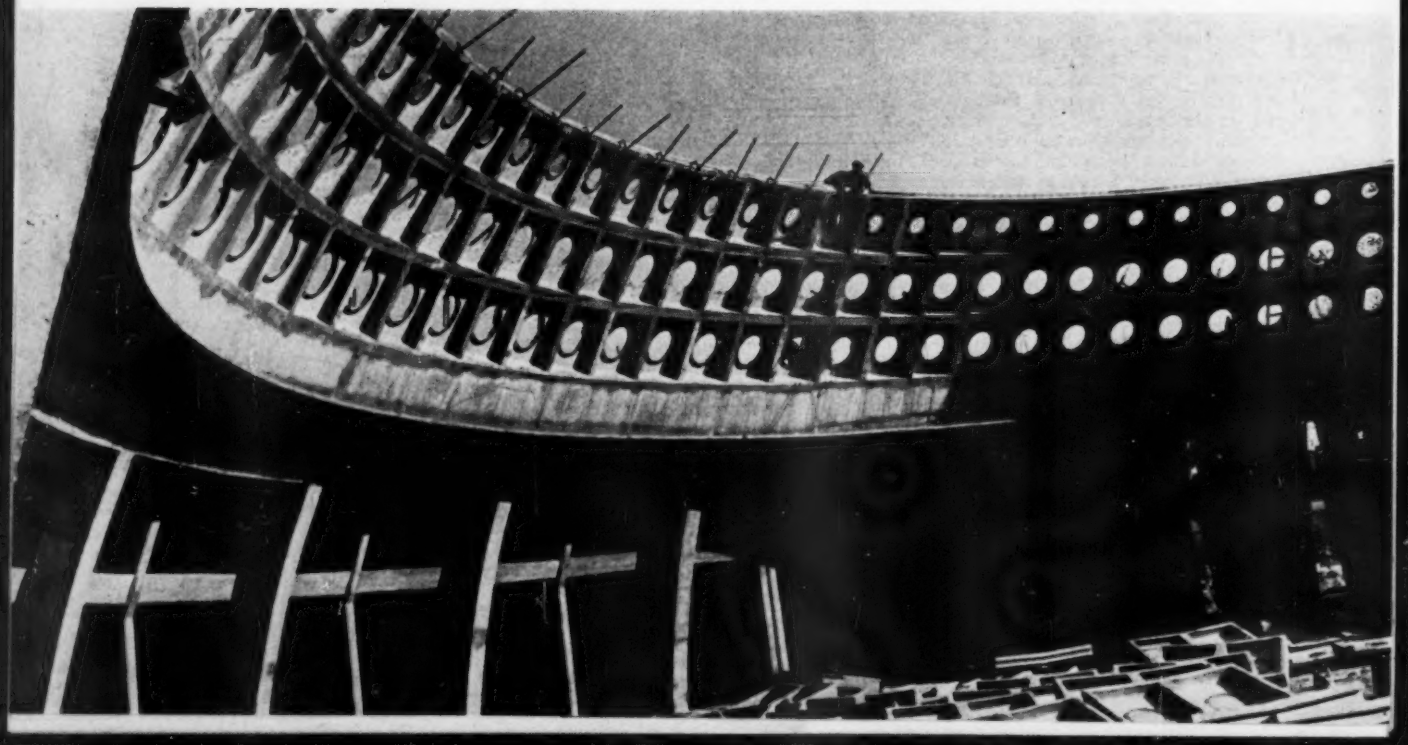
MARKET IN ALGERIA

hours. The laying of the circular rim girder, constituting the base of the dome, called for great care, as also did the working out of the inclination of the successive lifts, to ensure that the meridians and parallels were correctly shaped. The market was constructed in 14 basic operations as follows, in their order of procedure:

(1) Traditional construction of the foundation, the fish market, and the structure up to the rim girder, at the level of the administrative terrace. (2) Erection of scaffold and slewing crane in the centre of the work. (3) Establishment of the workshop for prefabrication of the moulded units on top of the structure of the fish market. (4) The units are placed on the administrative structure, where they are joined together by the suspension and stabilization unit. The central crane raises each voussoir and places it in its correct position. (5) When the first thirteen rings of voussoirs have been erected, six tubular scaffoldings are put up, with their corresponding working platform, for the purpose of fitting the forms and concreting the first crown ring. (6) The jib and counterweight of the cen-

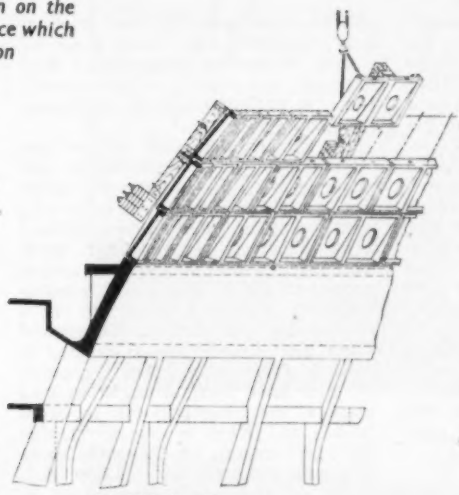


Above, completion up to the first crown ring. The whole assembly is carried out via the centre crane, with an auxiliary crane for assembly of the last voussoirs. Below, the first three rows of voussoirs springing from the in situ rim girder

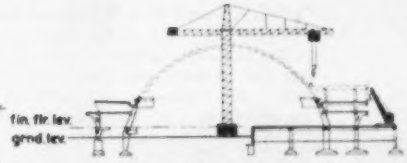


Above, the completed dome, with the administration floor in the left foreground. Right, diagrammatic procedure of assembly, showing the voussoirs being hoisted into position on the in situ rim girder, and the stabilizer device which holds each voussoir in the correct position

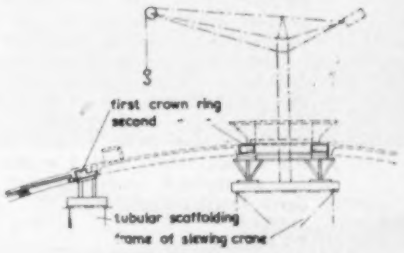
tral crane are dismantled, and as they cannot pass down through the interior, they are brought out via the exterior staging, which is mounted on the dome and consists of tubular units. The framework of this crane serves as a support for the formwork for the crown ring. (7) A small auxiliary crane is used for placing in position the last prefabricated voussoirs, which join together the two crown rings. (8) The second layer of the first crown is concreted, and whole of the second. (9) The tubular scaffolding of the first ring and the small central crane are dismantled. (10) The forms are fitted for the small dome to finish off the roof, and the concrete is raised by means of a hoist. (11) Waterproofing layer of the area between the two crown rings is fitted. (12) The tower scaffolding is dismantled. (13) The administrative terrace situated above the entrance is completed. (14) Backfilling up to the level stipulated, and paving.



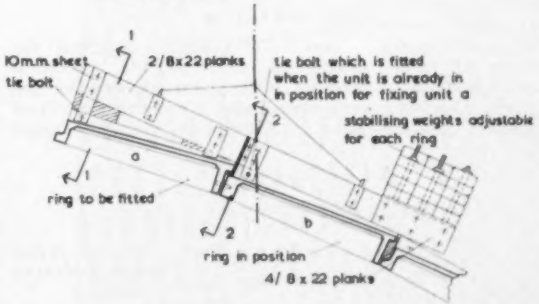
ASSEMBLY OF THE VOUSSOIRS



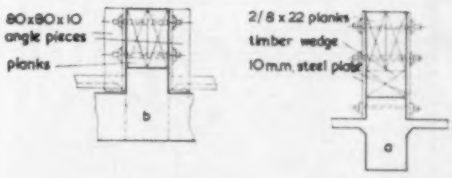
CROSS SECTION

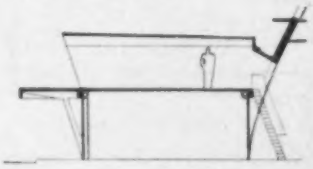


ASSEMBLY OF THE CROWN


10mm sheet
tie bolt
2/8x22 planks
tie bolt which is fitted when the unit is already in in position for fixing unit a
stabilising weights adjustable for each ring
ring to be fitted
ring in position
4/8 x 22 planks

STABILIZER DEVICE AND VOUSSOIR





PERIMETER STORES

The first-floor over-hang provides continuous shelter and a generous lead in

MORLEY INDUSTRIAL CO-OPERATIVE SOCIETY LTD

Architect: J. G. L. POULSON

THE Co-operative Wholesale Society plays a very large part in the retail and distributive trade throughout the country, and should from this point of view be included in our issue. Here, in the design of the building and in the planning and conception of the shop, the accent is on service and amenity for the customer. The additional sales area provided more than double the former emporium areas, and has enabled a general reorganization to take place throughout the entire premises, with a consequent increase in shopping facilities for the people of Morley. At the Albion Street end of the scheme, a three-storey office block provides much needed extra accommodation for clerical staff, and a public hall for all matters connected with dividend distribution.

Planning

Apart from a maximum use of the site, the only other controlling factor in design was to ensure an uninterrupted floor space throughout the new sales areas, and a link-up at both floor levels with the existing premises. The client desired a more informal store than had been possible in the old, restricted premises, and particularly requested that large areas of glazing be used at ground-floor level in order to obtain a "showroom" effect, in preference to the traditional closed-shop window.

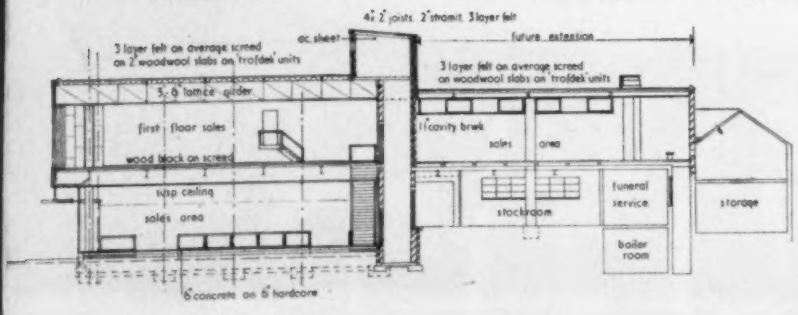
Certain easements on the site and improvement lines permitted by the planning authority allowed the architects to take the first-floor sales area to the building lines, but necessitated a set-back at ground-floor level. This factor resulted in an arcade treatment which allows for window shopping under cover of the first-floor over-hang. Due to the ground slope the ground-floor sales area is stepped down twice. These changes of level have been arranged to take place at the obvious points in circulation, and there is no doubt that they give interest to the whole shop-fitting layout, and allow easier definition of floor space than would be possible on one level.

Construction

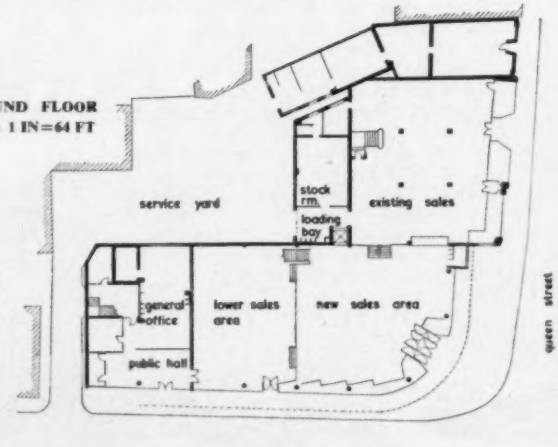
Two factors which governed the choice of steel as the structural medium were speed of erection and large spans with a minimum depth of beam. Stanchions are 20ft apart generally, and in the sales area spans of 55ft are achieved, using plated girders 3ft deep. These also cantilever about 7ft over the column at one end. At first-floor level the stanchions are cleated down into the continuous girders, and they support steel lattice girders spanning similar distances, and 3ft 6in deep. The use of lattice girders at this level allowed a considerable amount of mechanical equipment, ducts, etc., to be housed in the ceiling, and be readily accessible at all times for maintenance. An *in situ* concrete slab laid on hardcore provides the ground floor to the building, the first floor is of pre-cast hollow concrete beams spanning approximately 11ft between small section steel joists which also act as ties between the main girders. The roof is of stressed plywood construction; it was hoisted and fixed in 20ft by 20ft units, these being strapped down to the top chord of the lattice girders. The specialist firm responsible carried out the roofing to the curved portion *in situ*, using timber joists and plywood infilling.

A steel-framed canopy is hung from the underside of the cantilevered first floor, with side bracing back into

CROSS SECTION
SCALE : 1 IN=32 FT

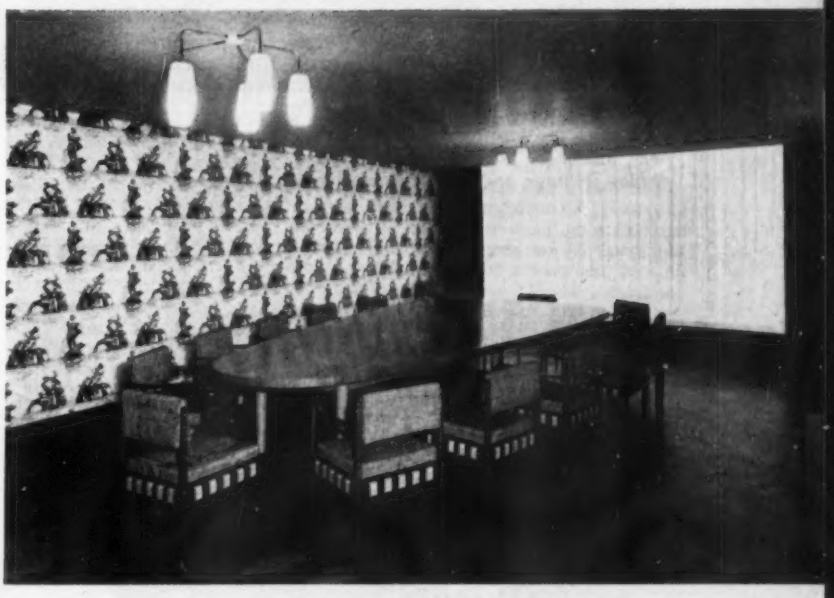


GROUND FLOOR
SCALE : 1 IN=64 FT



General Contractor:
THE CO-OPERATIVE WHOLESALE SOCIETY LTD.

Sub-contractors and suppliers:
Balustrading and Metalwork: The Brookfield Art Metal Ltd. *Bituminous Felt Roofing:* Northern Asphalt & Roofing Works Co. Ltd. *Electric Lift:* The Keighley Lifts Ltd. *Electrical Installation:* The Co-operative Wholesale Society Ltd. (Engineering Dept). *Gas Installation and Fittings:* The Northern Gas Board. *Glazing:* The Bradford Glass Co. Ltd. *Heating Installation:* The North-Eastern Gas Board. *Ironmongery:* Alfred G. Roberts Ltd. *Marble Work:* W. H. Fraley & Sons Ltd. *Metal Windows, Roof Lights:* Mellowes & Co. Ltd. *Neon Signs:* The Oldham Sign Service Ltd. *Painting and Decorating:* Morley Industrial Co-operative Society Ltd. *Plastering:* Jas. Phillips (Plasterers) Ltd. *Pre-cast Concrete Floors:* Concrete Ltd. *Pre-cast Window Surrounds:* Clarincrete Products Ltd. *Reinforcement:* The British Reinforced Concrete Engineering Co. Ltd. *Roller Shutter:* Mather & Platt Ltd. *Sanitary Fittings:* John Mollett Ltd. *Shopfittings, Furniture and Showroom Doors and Windows:* Drake & Warters Ltd. *Steelwork:* W. H. Armfield Ltd.. *Suspended Ceilings:* The Expanded Metal Co. Ltd. *Terrazzo Flooring:* The Juan Flooring Co. Ltd. *Thermoplastic Flooring:* Semtex Ltd. *Trofdek Roofing:* H. Newsum, Sons & Co. Ltd. *Wood Block Flooring:* Hollis Bros. Ltd.



Top, type-design counters to the shoe department; centre, the board room. Bottom, a "Junior Miss" display cage

a structural deep transome in the showroom windows. This framework is clad in polished plywood on the soffit and where it is covered by the first floor, louvres are inserted to discount the apparent weight. It is taken into the shop at the main entrance, and recessed fittings are used, inside and out, to provide a visual lead-in.

Finishes

External finishes have been chosen to provide a bright exterior with minimum maintenance. Panels of green insulated glass are used as facings to panel walls and the ceiling space at first-floor level. The first-floor cladding is in Travertine marble. White insulated glass panels are used on the office block walls. Stall risers are in grey terrazzo.

Internally, walls and ceilings, where exposed, are plastered and emulsion painted. Flooring is wood block throughout, with terrazzo and thermoplastic tiles in the office block.

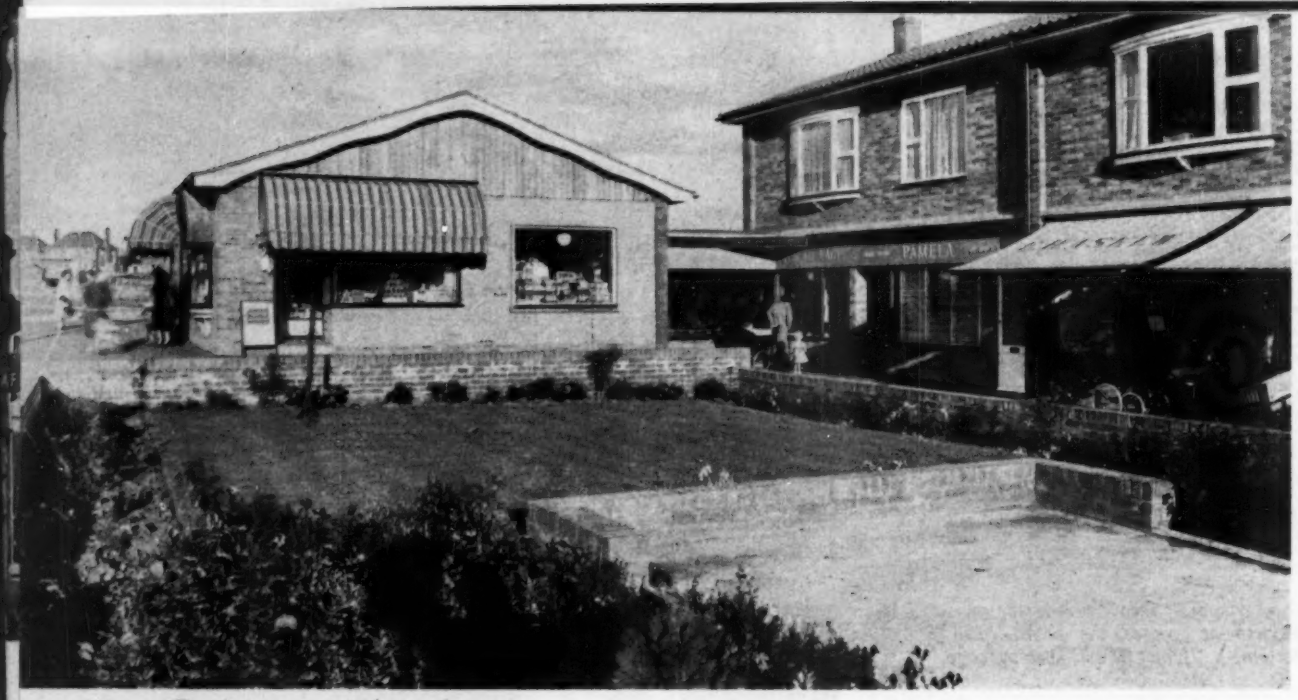
Heating

Heating and ventilation is fully automatic, with summer and winter controls. Radiation gas-fired warm-air furnaces are distributed at ground-floor level in the sales area and office block and warm air from these is forced through a system of ducts, usually in ceiling voids, to discharge through registers.

Shopfitting

The whole of the shopfitting design was entrusted to the architects working in close collaboration with the building committee of the society and individual sales managers. In order to standardize the fittings as much as possible, a few basic counter types were evolved, capable of containing shelves, trays, or for use as glazed showcases. Sapele mahogany is the principal timber used for all fittings, together with beech framing, carriages and legs, and most shelving is ¼in polished plate glass.

6 concrete on 6 hardcore

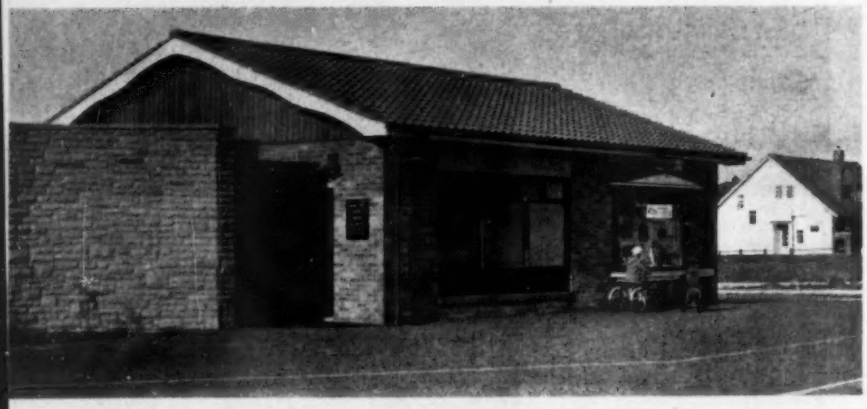


The shops are grouped around a green. Each block is joined by means of small link buildings which augment the display frontage and unify the scheme

SHOPPING PARADE, GOSFORTH

Architect: JOHN GARSIDE

Below, a branch of Barclays Bank in one of the smaller blocks, and the two-storey main block with flats over



LAST but not least, is the problem of designing shops for the neighbourhood unit. At Brunton Shopping Parade, the architect has carefully emphasized the domestic scale of the shops, and provided a pleasant green as a mark of its social character. The developers, Brunton Park Shops Limited, are an associated company of the estate contractors, John T. Bell & Sons Limited.

Natural ground slopes were maintained and paved to falls, to avoid introducing steps. The scheme is divided into three blocks of single-storey lock-up shops and one block of shops with flats over. Each block is joined at the corners by flat-roofed connecting links, to obtain maximum display frontage and to unify the scheme. Total accommodation provided consists of four double lock-up shops, and five double shops with five flats over. The double shops are easily convertible to singles, so that 18 shops could be made available. Construction is traditional, with load bearing brick cross walls and golden sand-faced facings. Other external finishes are coursed Springwall sandstone, and polished makore vertical boarding. Roofs are extremely low pitch, consisting of Marley Anglia Tiles on tin wood-wool slabs, with a layer of bituminous underfelt and a further layer of heavy, mineral-coated felt to ensure watertightness.

Information Digest

OFFICIAL PUBLICATIONS

● **British Standard Specification,** from British Standards Institution, British Standards House, 2 Park Street, London, W.1. Telephone : MAYfair 9000.

B.S. 1010 : 1959. Draw-off taps and stopvalves for water services (screw-down pattern). Price 10/- plus postage.

Changes in detail designs, based on the 1953 edition, were found to be desirable following routine testing by water authorities, which resulted in an unduly high percentage of rejections. These changes do not affect manufacturing standards, but by minor modifications have economized in materials while retaining interchangeability of parts. The manufacturer's name or mark is to be shown and the number of the Standard. The changes are, incidentally, expected to reduce the number of "manufacturers' rejects", but do nothing to change the position where a purchaser buying a stamped tap or stopvalve may, on sending it for stamping by the water authority, have it rejected. If all water authorities have the same requirements in their tests it should be possible for manufacturers to send all their taps for testing and stamping and include the cost in the retail price. Alternatively, surely approved manufacturers should be licensed to make tests to water authority standards and mark the taps suitably, in the same way as the electricity boards and A.I.D. in aircraft manufacture avoid delays by licensing or approving outside inspectors. Not all water authorities require taps or stopvalves to be submitted for testing, but this, too, is wrong. The simplest way out would be for water authorities to accept the tests laid down in B.S. 1010, or new and more searching tests, so as to supersede authorities' tests and, incidentally, ensure the same high standard in all parts of the country. The silliest situation arises when taps tested and stamped by water authorities develop irremediable faults within a few days of being fitted. This results in wasted money in paying for testing and stamping and plumbers' time in addition, quite apart from the inconvenience occasioned to the building occupier who may be unable to use the fitting for some weeks while a replacement is obtained, tested, stamped and fitted.

The Standard is illustrated with fourteen figures and dimensional tables, but does not affect the appearance of patterns approved in the superseded edition.

● **Questions and Answers. February 1959. B.R.S. Digest No. 119.** H.M. Stationery Office. Price 4d.

The "Questions and Answers" periodic issues often throw new light on practice and usage. The present issue deals with the Heat Pumps for Domestic Heating, Costs of Short Bored Piles, Shrinkage Cracking while Houses Dry Out, Dry Construction for Partition Walling, and lastly, Single Stack Plumbing for Two-storey Houses.

Heat pumps must have been very nearly economic propositions for about thirty years now but the Digest says that, for houses, no suitable models are at present available. Development work now in progress should result in the production of economic units in time. The Digest says that comparison with demands in the U.S. shows that in that country the cost can be justified more easily because it is used also in hot weather but in the opposite way—as a cooling unit. In the U.K. its use would normally be limited to providing warmth only, although heat pumps serving also as refrigerating units would show an economic advantage. The warmth extracted by heat pump from atmosphere, soil or water is best used in a warm-air or heated floor panel system rather than the conventional hot-water radiator system. Such applications should result in running costs about one-third of electric heating. In any comparison with heating operating on solid or oil fuel, allowance must be made for the omission of boiler, flue and fuel store and possibly part of the cost of a refrigerator or larder cooler, and the heat pump would be expected to cost an equivalent sum.

Short bored piles have not been adopted enthusiastically by all architects and builders. Their chief value is for buildings on shrinkable clays, but some hesitate to adopt this foundation system in preference to deep mass beams because of the greater supervision necessary. The Digest does not give any comparative costs as so much depends on the size of the contract and type of subsoil. It puts the cost of foundation work below d.p.c. level in a house of 900 sq ft at £50, allowing for normal strip foundations down to 2ft 6in and cavity brickwork. If in ordinary shrinkable clay the depth should be increased to 3ft 6in when the cost would be increased to £75. It is then contended that on such clay a short bored pile foundation should cost no more than for the shallower foundation while giving in addition protection from shrinkage resulting from tree roots, but goes on to say that mechanical boring would normally only be economic when more than two houses were being built. The piles quoted are 12in to 14in diameter, and between 8ft and 14ft long. These can be bored by hand auger, but only if there are few stones in the clay. In other soils it is doubtful whether any advantage is derived from using the short-bored pile foundation. It is useless in loose soils as the walls of the bore collapse as the hole is drilled.

Shrinkage cracking annoys owner, architect and builder but the Digest sees no way, in the normal course of events, of preventing it from occurring. The usual recommendations are made—keep materials dry, use materials of low absorptive capacity, etc., but even so shrinkage cracking may develop. The Digest goes on to point out that there are other possible causes of movement causing cracking, although omitting to list them. Timber, sandlime bricks, *in situ* lintels and plasters employing lime and Portland cement are the main causes of cracks. The most uncontrollable of these is probably timber which the Digest says should be dried to its correct moisture content and kept in that state during and after construction of the building—an insoluble problem surely. Bricks and blocks covered by British Standards have known shrinkage limitations and such inherent stability is assisted by not using dense mortar such as 1 : 3 Portland cement and sand. Other recommendations are made, including keeping materials under cover during wet weather, protecting incomplete work from rain, allow backings and undercoats to dry (not just harden) and shrink before finishings are applied, use adequate binders and struts to reduce the movement of timber, use details which cover joints where shrinkage may be expected to show and provide movement joints—for example in concrete pavings. Much can be done by detailing to cover shrinkage cracking but one wonders when looking at students' detail drawings whether lecturers are aware of the causes of shrinkage—in wood, for example—and whether they ever understood why traditional details were developed.

Dry construction is a subject which was examined in some detail in the special issue on Prefabricated Buildings (March 25, 1959) and always leads to discussion on comparative costs and speeds. These are examined in the Digest, reference being made to data obtained in the building of 400 houses in all on five sites. All houses were alike in plan but some had traditional clinker-block partitions, wet plastered, while others had factory-made partitions finished with plaster. Of the latter, two were of standardized unit widths cut to fit as necessary and two purpose-made to fit and complete with joinery. It was noted that panels could only be used on straight work, traditional construction being needed at reveals, doors and chimney breasts. So as to take full advantage of such a system of construction the plan should be designed to suit the units. Traditional work in partitions was in fact cheaper than the use of factory-made panels and the saving in time looked for in using these was largely lost because of the need to use traditional construction to do sections of the work.

Information Digest (continued)

Single-stack plumbing is not cheaper for two-storey houses is the answer the Digest gives to a questioner. The chief advantage is that, where the planning is suitable, the system allows internal stacks to be used and in that way to improve the external appearance of the house. The Digest gives no details as to how this conclusion is reached—a conclusion that may shock many architects, who have adopted the system widely on the presumption that it could not cost more than the dual-pipe system (south of the border only considered). In flats construction, the Digest notes that savings of about £40 per dwelling may be effected by its use.

● **Choice of Careers, No. 7: Wall and Floor Tiler.** Central Youth Employment Executive, Ministry of Labour & National Service. H.M. Stationery Office. Price 1/- plus postage.

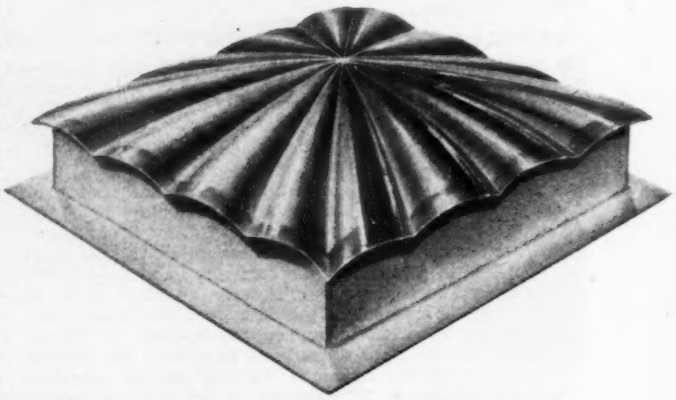
Issued originally in 1950, this booklet gives a very quick glance at the tiler's trade but the new edition apparently is a repeat of the first so no harsh criticisms can have had any effect. It mentions historic origins of (clay) tiling and briefly describes where tiling is used—externally and internally, mentions faience work, fire-surround slabbing and mosaic. Photographs with captions are probably the more informative and, to the boy, appealing part. Much more might have been done to show the craft of tiling, by word and illustration. Conditions of apprenticeship and employment are outlined. The most curious omission is that of a definition of the word "compo". The text says that tiles are soaked to prevent porous tiles from drawing moisture from the compo before it has set. There is no clue here, or elsewhere, as to what compo is. What was wrong with the word "mortar"? That suggests immediately to a layman Portland cement or lime and sand mixed but compo suggests a composition such as a bituminous adhesive—of which incidentally there is no mention. Other annoying faults are largely due to bad editing which probably detract in no way from the booklet's impact on a prospective tiler. It should have been made clear that thermoplastic tiling was excluded.

● **Choice of Careers, No. 17: The Plumber.** Central Youth Employment Executive, Ministry of Labour & National Service. H.M. Stationery Office. Price 1/3 plus postage.

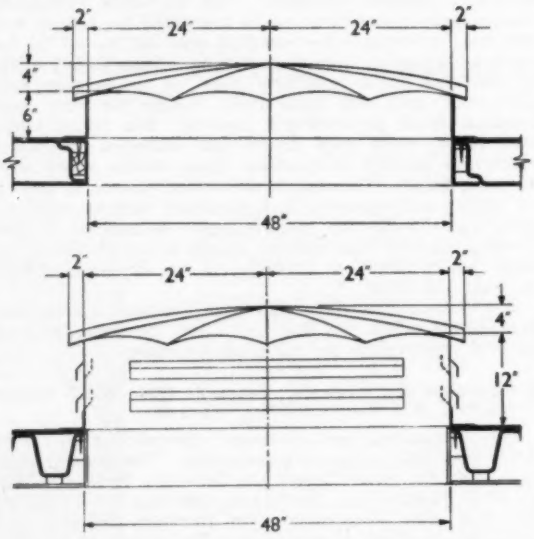
This also is a re-issue, the first edition having appeared in 1951. In quality it is much superior, partly by reason of the greater range of the plumber's work but also in creating interest by good short descriptions of the types of pipework and sheet metalwork the plumber does. It also refers to specialized trades like ship plumber, coppersmith, etc. Its range is, therefore, very comprehensive and factual, warning readers that geometry is a necessary qualification for sheet metal and some metallurgy for all plumbing. The edition is very largely brought up to date by the inclusion of reference to plastic piping but the absence of a drain cock on the rising main in the diagram of the plumbing of a house indicates that this has not been re-drawn recently. There are some points one can quibble about—why, for example, speak of a "lavatory pan" when meaning WC pan and why use the term "capillary fitting" (explaining only "capillary") when "union" or "joint" would have been clearer than "fitting" to a layman. Photographs show many types of work in progress and the muddle that so often characterizes a workshop.

● **Imperial War Graves Commission. 39th Annual Report.** H.M. Stationery Office. Price 2/6 plus postage.

The report covers the year ended in March, 1958. It includes comments on the condition of war graves in many parts of the world but political unrest prevented some being seen by headquarters staff. Information received, however, indicates that even without the desirable supervision, cemeteries and memorials generally have been well maintained. The bulk of the work now is in upkeep but some constructional work is reported and much labour has been expended in the timeless duty of improving lawns and attending to shrubberies. The report is well illustrated with photographs of the main cemeteries, the uneven quality of design being apparent but as only administrative staff is named, except for the consultant architect, it is not possible to give praise where praise is due. The financial statement is also comprehensive in the information given.



This illustration of the new translucent Unilux domelight is taken from U.A.M. Group Information Bulletin No. 1, 1959, which is mentioned on page 526. The domelight is available either with plain curbs or with curbs incorporating a form of ventilator designed to remove any condensation which may form on the inside of the dome. Details of the two types are given in the sketches below



● **New Developments in Industrial Control.** Department of Management Studies, The Polytechnic, Regent Street, London, W.1. Price 5/- plus postage.

Five lectures dealing with alternative methods or different aspects of development control are given in this booklet, edited by M. D. Callender, who also gave one of the papers and is senior lecturer at the Polytechnic. The titles of the papers are (1) The Economic Forecasting Approach, (2) The Management Accounting Approach, (3) The Electric Computer Approach, (4) The Statistical Approach and (5) The Personal Approach.

It may be doubted whether any such studies can have

any direct value either on architectural professional practice or on the individual building or civil engineering contractor. Indirectly it seems likely that understanding of these techniques, together with access to the data necessary, could broadly be helpful. The aim is, of course, to produce information to enable management to decide what rate of production to plan for, or possibly on which of several products to concentrate the greater part of the manufacturer's energies.

The architectural profession being very much at the mercy of the public's whim, affected by international tensions and domestic labour unrest, would appear to be unsuitable for the application of these studies to a greater extent probably than any other, for in time of war even the theatrical profession was considered more important than the architectural. But perhaps even this knowledge might have its use if only in showing that, in times of stress, architects are expendable: therefore in any crisis architectural services will be at a discount, so guidance as to the trend of political and commercial relations between nations may lead to preparation for specialization in a certain type of development expected to be essential.

The building industry is fully committed in times of war but seriously relaxed during periods of depression. Economists claim to be able to forecast monetary reverses, the simplest way probably being to note what is happening on the American continent, knowing that it will be echoed in the U.K. before long. But can such knowledge help the building industry? On the financial side, certainly, by reducing purchases of plant and so precipitating the depression although conserving capital. At the same time presumably there would be reduction of staff and labour, because there is no other form of production to which the building industry can turn.

Fortunately the lectures in this booklet have a much more positive attitude—to maintain and increase productive capacity and sales by intelligent forecasting of demands and development of new fields of activity. The first paper shows how necessary it is to realize that planning for production without market analysis is wasteful. The second lecture dealt with the accountant's method of assessing probable trends—a valuable aid to industry shown by the growth in employment by a rise of 75 per cent in the last 15 years, mainly in the sphere of management accounting. This is concerned primarily not with the annual balance sheet but with profit margins, stock costs, rent charges, sales-and-production graphs, etc.

The electronic computer approach is valuable where, although the facts necessary for management accounting are available, they are so many and varied that it is not economically possible for staff to be employed to show the true trends quickly.

The statistical approach concerns the method of presenting the data available, its lucidity affecting the accuracy of forecast by the management. For this purpose the data may be indicated graphically.

The personal approach is interesting in being quite unlike the other lectures, being concerned with the qualities of mind of the managers. Energy is of first importance but must be accompanied by high intelligence, although there may be cases where great energy may be more valued than a very high I.Q. Ambition—the will to achieve or accomplish—is also important, while equanimity and leadership are also necessary qualities. Knowledge of the techniques involved in the manufacture is needed for understanding the standpoints of other members of the production team.

PROFESSIONAL ASSOCIATION PUBLICATIONS

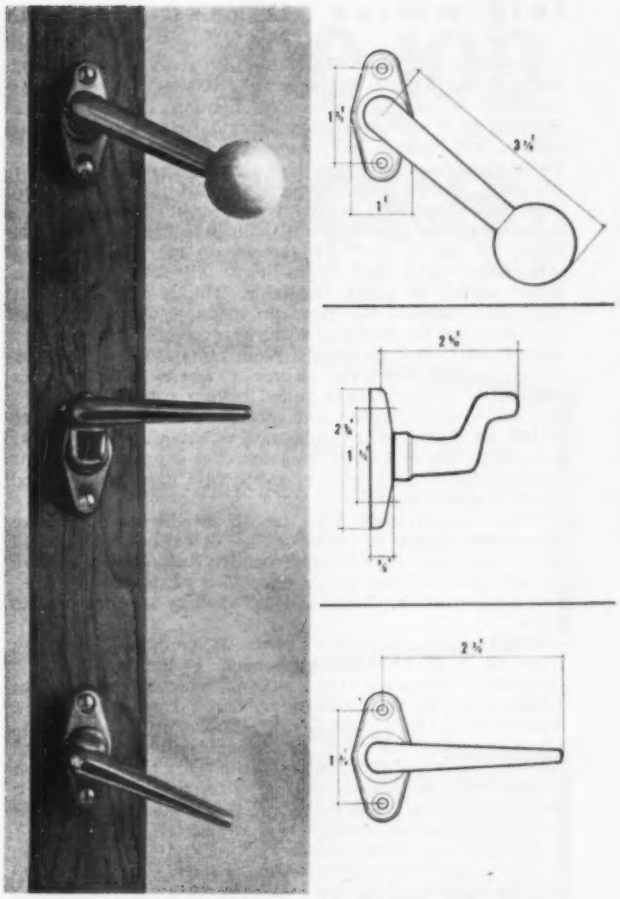
● **Hospital Electrical Installations and Equipment.** J. W. J. Leslie, M.I.E.E., M.Cons.E. The Association of Supervising Electrical Engineers, 23 Bloomsbury Square, London, W.C.1.

This paper is a most valuable guide to current good practice. The necessity for unbroken service demands alternative sources of electrical supply, either by separate main feeder or standby plant, the latter more common in undeveloped areas. Humidity and high temperature have to be guarded against, the former by using either galvanized conduit or mineral insulated cable, while P.V.C. cable is superior to V.I.R. in warm conditions. Uniformity of socket outlet pattern is necessary for general equipment, the 13A system being economical and suitable. On the other hand 15A sockets are necessary for other equipment for safety reasons.

Ward light fittings include bedlamps, examination lamps, general light fittings and low intensity lighting for night use. Bedlamps must have cut-off designed to avoid annoyance to other patients, as must the general lighting. Examination lights may be movable bracket pattern while for rest times low-level fittings directing light upwards and situated between beds are being tried. Cold cathode general lighting is also being tried, fitted round the cornice.

Bedside services include bedlight switch, 13A socket outlet (sometimes one outlet shared by two beds), call-bell press which, in cubicle plans, must register at the nurses' station and be capable of being cancelled, and, more generally now, provision for external telephone service by means of a G.P.O. jack. The side of the locker has proved acceptable for the mounting position. These services can be carried round the ward in multi-way trunking.

X-ray equipment of a portable type is now being used in wards and demands a 30A outlet with 60A service, two outlets being provided in each ward. The outlet must be marked "X-ray only".



These silver anodised aluminium window handles are designed for wooden windows. They are depicted in Alfred G. Roberts latest publication (page 526) and are taken from the Wehag range. The knob of the top handle is in either black or white plastics

Information Digest (continued)

Operating theatres are usually arranged in pairs (Information Digest, February 19, 1958) which makes for economy in cabling for general lighting, operating table lighting, pilot and emergency lighting, main voltage socket outlets, low voltage (6V) services and X-ray equipment. Switches and outlets must be designed to avoid any risk of spark which might ignite anaesthetic gas while not requiring flameproof standards. The requirements of surgeons in operating lamps are discussed, intensities ranging from 300 lumens to 5,000 lumens on the Continent but considered much too bright here. All fittings must be either sealed or easily cleanable. The X-ray equipment here also requires the same provision as in a ward but this must not be confused with the requirements of X-ray departments. One important point emphasised is the risk of explosion from static electricity wherever anaesthetics are used—"a dry blanket pulled from a rubber sheet resting on a metal trolley can produce a static charge of 20,000 to 30,000 volts". Adequate earthing and the use of anti-static rubber and flooring material is necessary: floor earthing can be achieved by using wire netting connected to the conduit system.

X-ray departments must be served directly from the main switchroom to avoid volt fluctuation and should have their own switchboard locally. Radiologists require in their examination rooms very low intensity lighting to avoid eye-strain in changing from viewing to other routine work.

Electro-encephalography demands complete screening from all other electrical equipment, including automatic telephone exchanges—light fittings must be fitted with metal mesh over open ends of reflectors if near the patient. Screening to walls and floors is normally arranged by using ¼in copper mesh on all surfaces including doors and windows. For pathological laboratories and post-mortem departments, fluorescent lighting is suitable, with 20 to 30 lumens over benches in pathological laboratories and about 200 lumens for post-mortem work.

In maternity departments the delivery rooms require the same electrical precautions as operating theatres. Good general lighting is necessary with, in addition, a suspended directional fitting such as a small pattern of operating table shadowless lamp.

Lifts for beds should be 8ft 4in by 5ft 8in—certainly not less than 7ft 8in by 4ft 6in. Where the speed is 200ft/min or more it is essential to arrange smooth starting and stopping, with self-levelling to within ¼in. Lift use being so great it is necessary to ensure that the volt demand fluctuations resulting do not affect other installations. In place of the normal alarm bell for use in breakdowns it is becoming normal to instal telephones connected to the automatic telephone system.

TRADE ASSOCIATION PUBLICATIONS

● **The Properties and Characteristics of Aluminium Casting Alloys.** The Association of Light Alloy Refiners and Smelters Ltd., 3 Albemarle Street, London, W.1. Price 4/6 plus postage.

The brochure commences with an introduction which urges that only alloys to British Standards be specified because of the differences in casting techniques which accompany differences in alloys resulting in some risk of unsatisfactory products. Advice is also given on the choice of alloys in the section "Guide to the Selection of Aluminium Casting Alloys". This is followed by details of the properties and characteristics of individual alloys. There is also a section on the heat treatment of alloys and the identification of casting alloys.

● **Weathering of Clear Finishes on Various Timber Species.** The Timber Development Association Ltd., 21 College Hill, London, E.C.4.

Two useful results appear from this investigation. One is to have available the untreated weathering properties of five much-used woods and the other is the grading of five finishes frequently used for wood protection as distinct from decoration. The five woods used were western red cedar, red meranti, sapele, idigbo and oak, samples of each being tested (a) untreated and (b) treated with a clear finish, while another set was kept untreated and in a dark cupboard so as to find out if any deterioration took place in such a protected situation. All samples were planed on all faces and initial moisture content was between 11 per cent and 15 per cent. Samples exposed to the weather were kept at the T.D.A. London office roof, Tylers Green, Bucks, and on Brighton Pier, the duration of the tests being the same throughout. Surface finishes were boiled linseed oil (three coats, the first two thinned), alkyd (three coats, the first coat thinned), alkyd (two coats, the first slightly thinned), phenolformaldehyde (three coats, the first thinned) and another alkyd finish (two coats, the first a primer-sealer). There were, therefore, three makes of alkyd clear finish used.

Boiled oil quickly became dirty in all situations, the grime delaying breakdown of the film by keeping out the ultra-violet rays. The result in the end, however, was that boiled oil is a poor protective finish. Another finish approximating to traditional varnish was much better, although only two coats were applied. The best protection was given by phenolformaldehyde on all wood samples but it appeared to be breaking down on all but western red cedar after seven months' exposure. The alkyd finishes were variable, showing that some manufacturers had surmounted the problem of weather exposure better than others. As no makers names are given there is no hint as to which to avoid specifying.

As regards woods, western red cedar, protected and unprotected, was much the best, while European oak quite definitely the poorest. The specimens were examined from time to time and the grain of W.R. cedar was found to rise while oak was especially poor. This will be no news to most people concerned with maintenance work but as all hardwood in the untreated specimens developed surface cracks it would appear that window cills should be made of W.R. cedar.

One strange and unlooked-for outcome of the series of tests is that the most rigorous conditions were experienced at Tylers Green—worse than Brighton Pier—worse than London's sulphurous atmosphere. The T.D.A. have been unable to explain this improbable conclusion. It seems unlikely that the air would be clearer in Bucks than at the seaside so some other factor must be at work. Having regard to the wooded area of Tylers Green one may be curious to know whether chlorophyll has anything to do with the decay. The T.D.A.'s experience, so contrary to expectation, causes one to reflect on current advertising by a paint manufacturer who claims that in towns his paints will last five years, in the suburbs seven years and in the country 10 years—but not at Tylers Green!

TRADE PUBLICATIONS

● **Automatic Central Heating and Hot Water by Gas.** South Eastern Gas Board, Katharine Street, Croydon, Surrey.

This publication can be obtained from any office or showroom of the S.E. Gas Board. It is non-technical in that it does not describe in detail how gas-heated boilers work, although B.Th.U. capacities are quoted and reference is made to small-bore central heating and thermostatically controlled ducted warm air. No reference is made to balanced flue heaters nor in the case of conversion from solid fuel boilers to gas boilers, of the real need to line the cold or exposed end of the chimney stack. This is a serious matter and one that the gas boards should always bring to prospective users' notice. One gas board has had litigation over this for some years, arising from damage alleged to have been done to an adjoining owner's house. The booklet also shows the latest patterns of radiant and convector gas room heaters.

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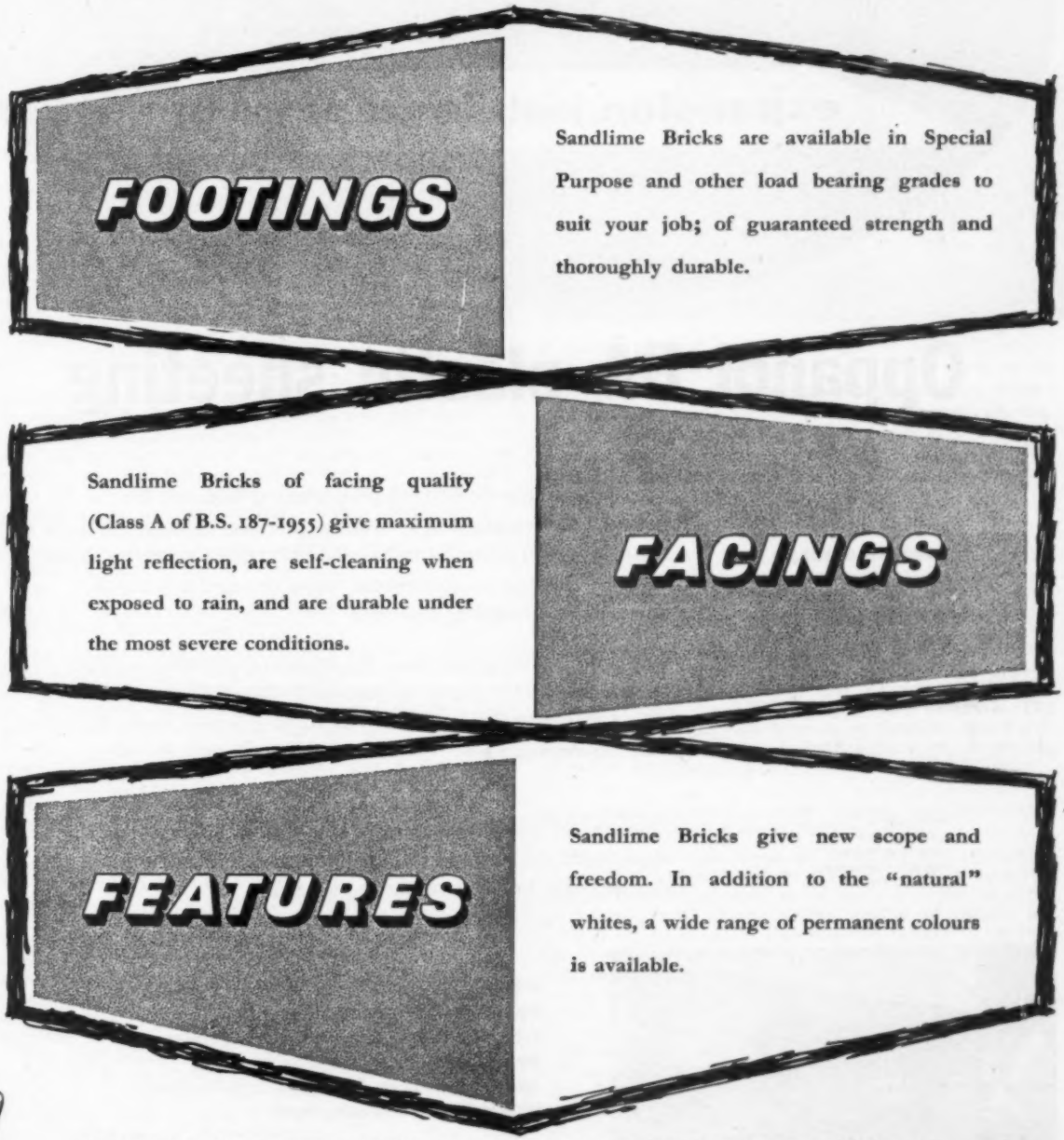
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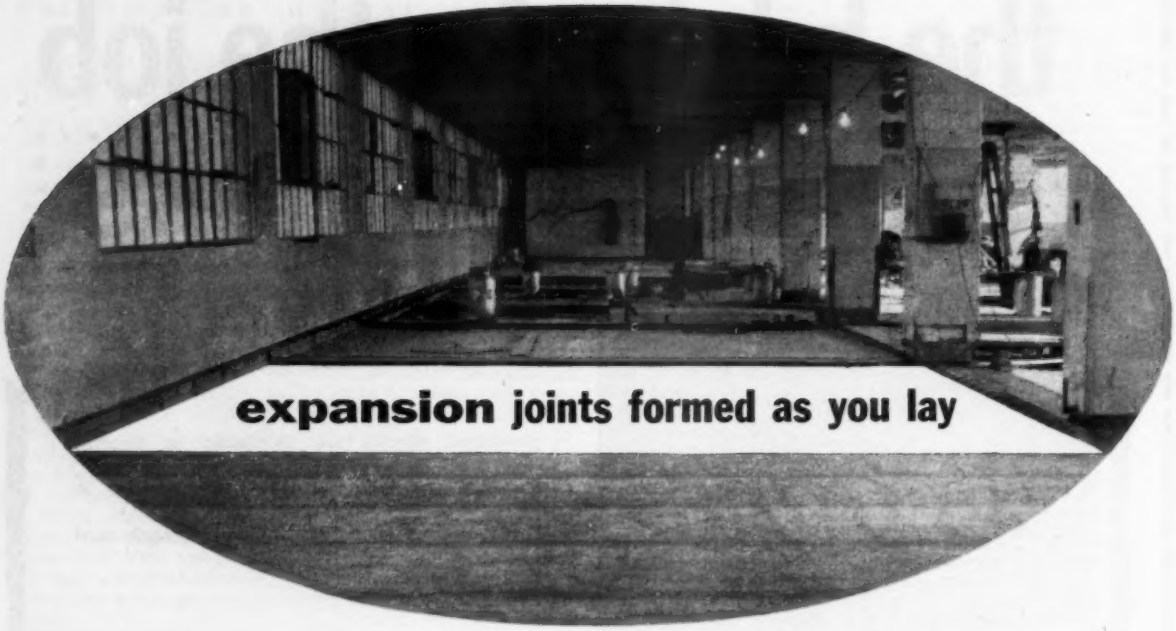

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Information Digest (continued)

● **Aerolite in Schools and Colleges. Technical Notes 194.** CIBA (A.R.L.) Limited, Technical Service Department, Duxford, Cambridge.

It is opportune that this publication should follow one on timber construction, for the quality of the cement or glue is of major importance. This issue of Technical Notes deals with the use of "Aerolite" 300 and 306. These are alike basically but the latter is a powder, while the former is a liquid. The pamphlet deals mainly with methods of storing the two components of 300, of which one is applied to each of the faces to be glued and which, on making contact, rapidly harden. There are also hints on fixing and cramping in addition to photographs of very interesting school work carried out with one or another of this firm's cements.

● **Foamable Polystyrene. Technical Service Bulletin.** Monsanto Chemicals Ltd. (Plastics Division), Monsanto House, Victoria Street, London, S.W.1.

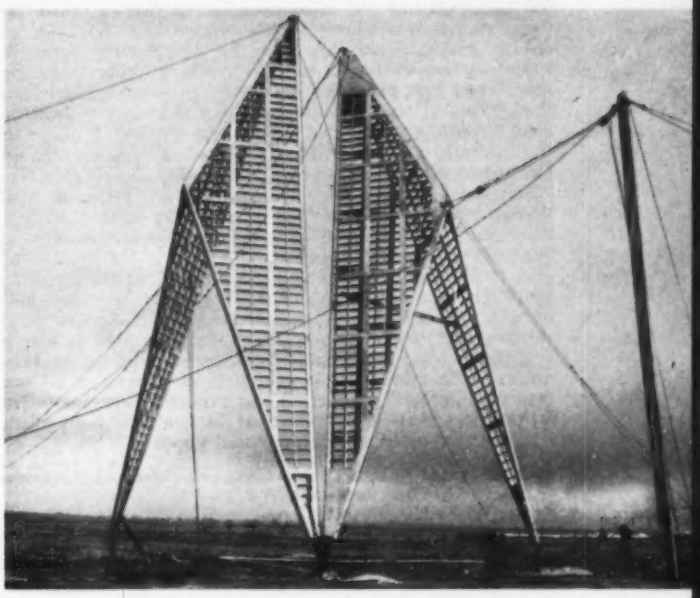
An insulation material which has been under development for some years is now offered in varying densities and in block or panel form. Its unprocessed form is in the shape of beads which, under the influence of heat—hot water, steam or infra-red—expands and can weigh between 1lb per cu ft for thermal insulation up to 5lb for special purposes. Heavier weights require special attention to plant design because of the pressure built up. It is odourless, non-toxic, dimensionally stable below 75 deg C, proof against moulds, fungi and vermin and can be rigid or flexible according to density. It can be stuck with most adhesives, cut, sawn, drilled and turned with ordinary woodworking tools. As to decoration, some paints may be incompatible. Thermal conductivity is quoted as 0·20—0·25 B.Th.U./in/sq ft/hr/deg F and water absorption less than one per cent in seven days' immersion. Comparative weights and conductivity values for other insulating materials are quoted. Suggested uses are wall and roof insulation, partitioning, ceilings, sound insulation and cold room insulation. It is not stated in what forms the material is marketed—whether in blocks to B.S. sizes, mat thicknesses, etc.

● **R.T.E.—Brussels 1958.** Rainham Timber Engineering Co. Ltd., Ferry Lane, Rainham, Essex.

The Brussels Exhibition contained a wealth of architectural invention and structural accomplishment in addition to a great deal of dull material. R.T.E. took advantage of the oportunities offered in Howard Lobb's Crystalline Hall and Edward Mills's Britannia Inn and British Industries Pavilion, to the full. The pyramidal form of the Government building could probably have been fabricated in other materials than wood but, for stiffness, light weight and ease of connecting the sections, wood seems to have been the ideal material. The brochure now produced describes the construction and erection methods. The sloping sides were made in halves, of glued laminated members, 6in by 1¼in, 6in by 12in and 6in by 10in. Shear plates, connectors and ¾in bolts were used to join the sections at the corners and ¼in Douglas fir plywood provided the stressed skin covering on the skeleton of small ribs. The main eight triangular panels, each 74ft high and 13ft wide, were joined loosely in pairs on the ground before being hoisted into the vertical position when the abutting sections were brought up in a similar way and all bolted rigidly together.

The main interest in the Britannia Inn for those with an eye for timber construction was, of course, the elevated gangway coming from the first-floor level. The main beams were 16½in by 3¼in, resting on 6in by 6in columns, all in glued sapele in laminations.

The British Industries Pavilion was too cluttered up to enable those unfamiliar with the design to appreciate its unique qualities. While the main structure was steel, the whole of the upper parts of the facades were an unusual form of curtain walling in timber totalling 27,000 sq ft.



A method of erection had to be devised before the three interconnected laminated timber spires which made up the Crystalline Hall at the Brussels Exhibition could be shipped to Belgium by the Rainham Timber Engineering Co. Ltd. This photograph shows the trial erection of two of the sections for one spire on a site adjoining their factory. This method was adopted at Brussels. Details are given in R.T.E.—Brussels, 1958

The mullions were 28ft long, made in 2in by 4in built-up sections at 3ft 4in centres. The horizontal glazing bars were circular in section. The construction proved economical and effective and is now being used for schools and industrial buildings.

Other timber buildings illustrated and briefly described as to construction are that for Study and Control Organizations, Belgian Congo and Ruanda-Urundi Hall, Reception Hall Staircase, Forestry and Hunting, The Church of the Holy See, Yugoslavia Pavilion, Town and Country and the Timber Industries Pavilion—all having points of considerable interest.

● **Development and Expansion.** John Summers & Sons Ltd., Hawarden Bridge Steelworks, Shotton, Chester.

There are several ways of indicating the purchasing power of a nation, from the cost of a loaf of bread in relation to hours of work, or the price of a pair of shoes in the same way, sometimes the number of persons per car but the most useful indication of national consumption is probably given by the amount of sheet steel needed per head per annum. At the present time the U.S. consumes about three times what we in the U.K. use but the leeway is being reduced.

A booklet issued by John Summers & Sons gives an indication of the rapid rise in the demand for steel since the end of the war. The company commenced work in 1893 on reclaimed land beside the Dee, the production of ingots amounting to 481,000 tons in 1948. Since then there has been more rapid expansion, reaching 1,127,000 tons last year—an increase of getting on for three times in 10 years. By early 1960 it is hoped this will be increased to 2,000,000 tons, following further large capital expenditure.

Before 1953, Summers brought in the pig iron necessary,

Information Digest (continued)

but that year saw the completion of the first of two blast furnaces which are now supplied from four batteries of coking ovens. There are now 12 open-hearth furnaces supplying ingots for a series of rolling mills including sheet steel for pressings for many products. There are three types of sheet. "Galvatite" is a zinc-coated sheet of even thickness which can be pressed without damage to the protective skin. "Zintec" is steel sheet zinc coated electrolytically which gives a good surface for painting. "Stelvetite" is probably best known as being a new departure in protected sheet steel, being coated with a plastics film in a choice of colours. Another speciality is "enamelling quality" sheet.

A power station was completed in 1952 which can feed spare electric power into the grid when required and equally can tap the grid when necessary. It also supplies steam power to the mills.

An interesting commentary on the change in the nation's affairs is contained in the fact that 25 years ago 80 per cent of Summers' production was exported, whereas today 80 per cent is used at home, but, in compensation, much of this is exported as manufactured goods.

● **The Tretol Specification Handbook.** Tretol Ltd., Tretol House, The Hyde, London, N.W.9.

This handbook has been compiled with the aim of providing a reliable guide, in the form of specifications, to the practical aspects of waterproofing, protection and maintenance of buildings. For this second edition, the arrangement has been completely revised in order to simplify its use and the handbook has been divided into self-contained, detachable specification sheets, each of which deals with a specific subject. There are three sections; the first deals with protective and decorative painting; the second covers a wide range of essential treatments and additives; whilst the final section is devoted to the various uses of bituminous membranes for waterproofing. The handbook should provide architects, builders and maintenance engineers with a readily available source of guidance to effective measures in the field of building and protection.

CATALOGUES

● **Wood Protection.** The British Domolac Co. Ltd., Abbey Wood, London, S.E.2.

This brochure is on their new protective coatings based on poly-urethanes, under the trade name of Isocyne. Applied by brush or spray, it is clear, cigarette-burn resistant and proof against alcohol in normal dilutions. It is suitable for internal and external use, for furniture, floors, seats and counter tops.

● **Flooring.** Vigers Bros. Ltd., Broadway Chambers, Ludgate Broadway, London, E.C.4.

A pamphlet has been issued describing "Feltwood". This consists of 18in square panels composed of a chequer-board arrangement of small timber blocks 4½in long, the thickness being ½in normally. The blocks are not tongued and grooved but are stuck to a strong bituminous felt underlay which is cemented down with bitumen. No woods are named as being available in this system but a number of popular woods can be had.

● **Flooring.** Gerland Ltd., 130 Mount Street, Berkeley Square, London, W.1.

This firm are the concessionaires of Gerflex, a plastic flooring from 1mm to 1·6mm in thickness. It is available in rolls 49in width or in squares 5¼in by 5¼in and 10½in by 10½in. Eight colours are available, both plain and marbled.

● **Window Furniture.** Alfred G. Roberts (Exports) Ltd., 182 Upper Thames Street, London, E.C.4.

This catalogue shows new designs of furniture for wood windows. The metal plates and levers are of silver anodised aluminium, levers being available with straight handles and ornamental knobs. Fittings are available for projecting, pivoted and hinged lights, and include friction stays.

● **Asbestos Cement.** Universal Asbestos Manufacturing Company Ltd., Tolpits, Watford, Herts.

This company has produced issue No. 15 of U.A.M. Products which include Universal asbestos cement, Union pitch fibre pipes, and U.A.M. plastics (translucent sheeting for roofing). Translucent sheets are also the subject of new Information Sheets which include troughing units, insulated roof lights, fluted dome lights, lights for asbestos cement buildings and flat sheeting, plain and coloured.

● **Electrical.** Falk, Stadelmann & Co. Ltd., 91 Farringdon Road, London, E.C.1.

This manufacturer's new range of fluorescent light fittings is illustrated and described in their "Summit Range" catalogue. The range is intended for industrial and commercial use and is designed for easy erection and assembly.

● **Trucks.** Geest Industries Ltd., Truck Division, White House Chambers, Spalding, Lincolnshire.

This catalogue, GT458, shows the full range of hand-propelled trucks. These are mainly intended for factory and stores use.

● **Acoustics.** Compactom Ltd., Oxgate Lane, Cricklewood, London, N.W.2.

This company offers its services in connection with any problem concerned with sound absorption, in addition to the well-known partitions and fitments services. All three are described in a new catalogue which illustrates work executed in acoustic correction and the provision of partitioning which is supplemented by detail drawings.

● **Sanitary Ware.** Allied Ironfounders Ltd., 28 Brook Street, London, W.1.

This impressive new catalogue shows the current range of porcelain enamelled baths, sinks and brassware. Where coloured baths are specified arrangements have been made for ceramic ware to be supplied from certain sources, as named, to match exactly.

● **Marley Products 1959.** The Marley Group, Sevenoaks, Kent.

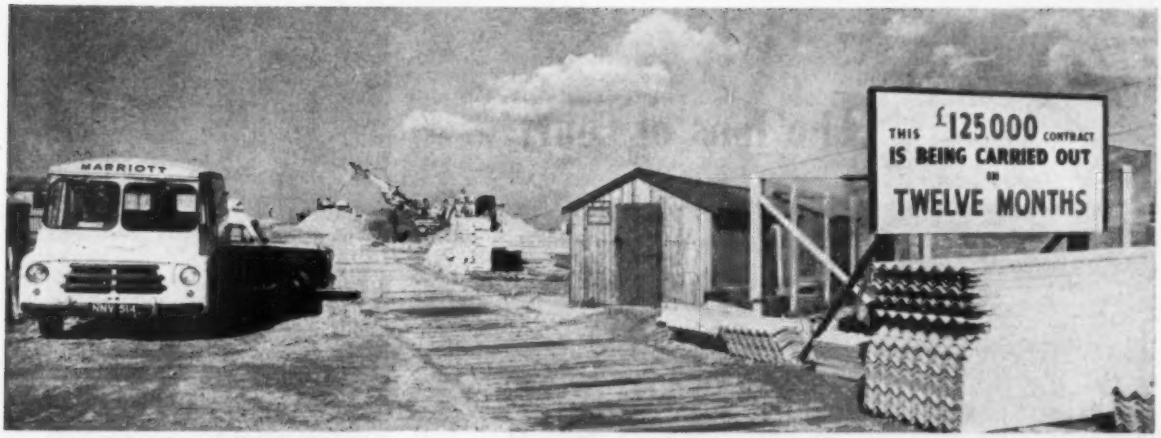
This group of companies has now produced its second annual catalogue—a comprehensive collection of leaflets bound into a semi-stiff cover with a Plastoic spine, and thumb-indexed into seven sections. It covers their wide range of products in concrete and plastics. In section 3, Marlith wood wool is joined by a new insulant, Marleycel expanded polystyrene. Section 5, which is devoted to the products of Marley Concrete Ltd., is even bigger than last year, with portable buildings and concrete buildings for the farm being amongst the newcomers.

● **Building Blocks.** Burns Building Supplies Ltd., Consolite House, Great Ancoats Street, Manchester 4.

A brochure has been issued on the company's "Consolite" lightweight cellular blocks, now made in thickness of 3in, 4in, 6in and 9in. Thicknesses 3in and 4in are 13⅝in by 9⅛in, while the 6in and 9in blocks are 17⅝in by 8⅝in. The two thinner blocks are designed for easy cutting into 1⅛in closure, ½-brick, cavity return block, ½-block, full brick, bonding block. They are made of crushed clinker, foamed slag and gravel to B.S. 1165, 877 and 882 respectively. Building mortar should be 1:7 cement/sand or 1:6 for severe exposure or heavy loads. Lime mixes 1:2:9 or 1:1:6 can be used.

● **Electric Signs.** Modern Electric (Installations) Ltd., 66/68 Brewery Road, London, N.7.

These manufacturers of neon signs use the trade name of "Moderneon". Fascia lettering and box signs in translucent plastic are the main product.

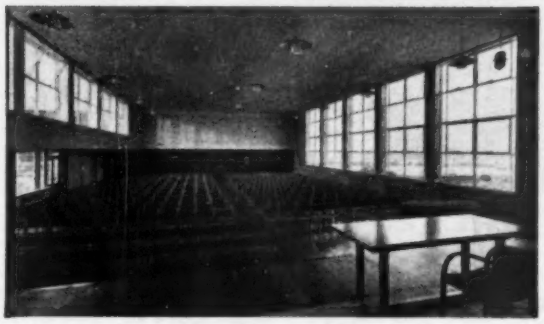


A clean site and a clear statement of purpose are hallmarks of the start of a Marriott job.

MARRIOTTS OF THE MIDLANDS BUILD–

£125,000 school in 12 months

A view of the new gymnasium of the Icknield Secondary Modern School at Luton.



The main Assembly Hall of the new building looking down from the stage.

Architects: The Luton Borough Architect

THE £125,000 contract for a new wing of the Icknield Secondary Modern School at Luton was commenced on January 1st, 1958. The job was completed precisely 12 months later as contracted, and as announced on the notice board placed on the site the day work commenced.

The confident announcement of the time schedule in this way is symbolic of the policy of Robert Marriott Limited. The job is to be done on time, and be done well.

To achieve this type of result Marriotts have today established an organisation comparable to that of any national firm of contractors. The company's work is, however, confined to within a reasonable radius of Rushden, Northamptonshire. Thus there is direct control of local labour resources, and of the work: two factors that reflect in economy in cost, and in the quality of the work.

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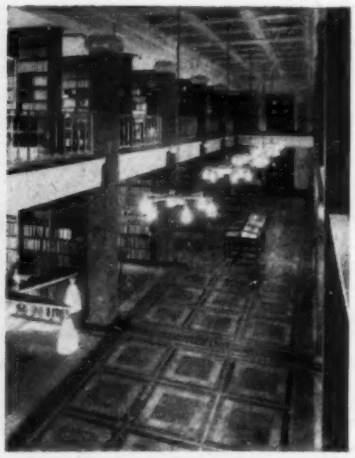

These photographs show the new Law Libraries of Grays Inn and (inset) Middle Temple, designed by Sir Edward Maufe, R.A., F.R.I.B.A.

...chose an Armstrong Cork Tile floor

These fine rooms have equally fine floors laid in Armstrong Cork Tiles. Because of its natural insulating properties, cork absorbs sound and retains a comfortable temperature underfoot. Armstrong Cork Tiles endure the tread of years with tough resilience and, having a rich character of their own, present an attractive appearance in any kind of business, or domestic surrounding. They are reasonable in cost and easy to keep hygienically clean.

Please write or telephone for further information.

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Armstrong Cork Company Ltd., Flooring Department, Bush House, Aldwych, London, WC2. Tel: COVent Garden 1101

Industrial Notes

● The Board of Trade is to stage a display of British consumer goods at the British Trade Fair which is to be held in Lisbon from May 29 to June 14. With the help of the C.o.I.D., over 300 exhibits have been selected for their suitability for the Portuguese market, including domestic equipment, furniture, glassware, kitchen equipment, furnishing fabrics, light fittings, pottery and wallpaper. A kitchen with dining alcove, a nursery and a dining room will form part of the stand and there will also be an inquiry counter. The stand, covering more than 3,000 sq ft, is to be designed by Neville Ward, A.R.I.B.A., F.S.I.A.

● Mr. C. J. B. Pratt, originally nominated as one of the assessors for the design competition for ceramic sanitaryware, organized by Associated Builders Merchants Ltd., has unfortunately been ordered into hospital for an operation. Should this prevent him from adjudicating at the due date, his place will be taken by Mr. T. E. Marshment.

● Muirhead & Sons Ltd., timber merchants, sawmillers and joinery manufacturers of Grangemouth, Scotland, are building a factory for the manufacture of timber laminated arches, beams, and other glue laminated products. This new venture is in collaboration with De Coene Frères, of Courtrai, Belgium, who were responsible for many of the timber laminated buildings at the Brussels Exhibition. The consultant structural engineers to Muirhead & Sons Ltd. are T. Harley Haddow & Partners, of Edinburgh.

● The nineteenth edition of the *Stramit Advertiser* is now available, free of charge, from Stramit Boards Ltd., of Packet Boat Dock, Cowley Peachey, Uxbridge, Middlesex. The circulation of this publication now exceeds 100,000 copies.

● Mr. J. S. Douglass has been appointed manager of the newly formed Building Trades Sales Division of B.B. Chemical Co. Ltd. The intention behind the formation of this division is to improve the technical sales service to builders, architects and the trade in general.

● Mr. L. Bailey has been appointed a director of United Steel Structural Co. Ltd., a subsidiary of The United Steel Companies Ltd.

● The Asphalt Roads Association Ltd. has appointed Mr. L. G. Watkins as director. Mr. Watkins will also continue to be the director of the Natural Asphalte Mine-Owners and Manufacturers Council.

● The activities of Panelec (Great Britain) Ltd. have, from March 30, 1959, been integrated with those of their parent company, British Insulated Callender's Cables Ltd. Panelec have, from that date, operated as the Heating Division of British Insulated Callender's Cables Ltd., and assumed full responsibility for the supply, sales and associated technical services for all heating systems, heating cables, etc., produced by the company. Panelec will be retained as the trade name for the products of the division, and the headquarters will continue to operate from 21 Bloomsbury Street, London, W.C.1.

● Pilkington's Tiles Ltd. were unable to declare the half-yearly dividend on the 5½ per cent cumulative redeemable preference shares which was due for payment on March 31, 1959. The preference dividends are now in arrear from October 1, 1956. The annual general meeting will take place on Thursday, May 14, 1959, at twelve noon in the boardroom of the Manchester Chamber of Commerce.

● G. C. Pillinger & Co. Ltd., heating and water engineers of Sutton, Surrey, have opened a branch at 2 Queen's Terrace, Exeter, Devon (telephone: Exeter 71902).

● An exhibition of samples of recent "New Building Materials" is to be held at the Building Centre, 26 Store Street, London, W.C.1, from May 5-16, 1959. No manufacturers' representatives will be present, but the technical staff of the centre will be in attendance.

● Polycell Products Ltd. have acquired control of the Merthyrware Company, of Merythr Tydfil, manufacturers of tiles. The Merthyrware Company will continue to manufacture and trade under its own name.

● Mr. J. Douglas Elstone, sales manager (Agricultural and Industrial Divisions) of the Dunlop Rubber Co. Ltd., Birmingham, has accepted an appointment with David Brown Industries Ltd., Tractor Division, Meltham, Yorkshire, as director of marketing.

● The Key Engineering Co. Ltd. has for some time been using special p.v.c. caps to protect the tapered ends of their 4in and 6in pitch-fibre pipes and fittings intended for export. These expendable caps have proved so successful that they are now being used to provide protection during transit and storage of 4in and 6in bends and junctions in this country.

This model was prepared from the architect's preliminary design of the new headquarters for the Radiation Group on the North Circular Road at Neasden, London, N.W.10. The new building will be constructed to the west of the existing office block to which it will be joined by a two-storey link. Construction is expected to start this year

NOTE

The British Lighting Council's new demonstration centre, designed by Hulme Chadwick, and reviewed on page 419 of A. & B.N., 1/4/59, is at Lancaster Place, London, W.C.2. It should not be confused with "The Lighting Centre" which is the name given to the Knightsbridge showrooms of Troughton & Young Ltd., and which were designed by the same architect.

NEW PRODUCTS

In this feature are reviewed new lines introduced to the building industry for the first time and additions or improvements to existing ones. Any advantages claimed for a product are from information supplied by the manufacturer

P.V.C. Rainwater Goods

This manufacturer is now producing rainwater goods made from rigid P.V.C. Initially, the range includes 2½in down pipes and 4in half-round gutters, in 6ft lengths, with all the normal fittings in rigid P.V.C., but it is eventually intended to produce larger sizes for industrial use. The wall thickness is 3/32in. The goods are claimed to be tough and resilient and to require neither painting nor maintenance. The goods are light in weight, easy to handle, and lengths can easily be cut. A gutter bracket has been specially designed to simplify fixing, since it does not require the use of gutter bolts. The new range is finished with a glossy grey surface, is resistant to all forms of atmospheric pollution and does not encourage the adherence of leaves or moss.

The Marley Tile Co. Ltd., Sevenoaks, Kent. Sevenoaks 55255.

Readers' Information Service, Ref. A. Date 22/4/59.

★

Stronger Wood Wool Building Slabs

This company is now manufacturing wood wool building slabs in which the transverse strength is claimed to have been improved sufficiently to enable workmen to walk over unsupported areas. These slabs are produced in widths of 2ft and in any lengths up to 8ft. Thicknesses obtainable are 1in, 1½in and 2in. 1½in slabs have been tested in accordance with B.S. 1105:1951 by the structural engineering firm of Painter Bros. Ltd., of Hereford. 36in test spans were used, and in all cases, the deflection under a load of 112lb. was less than the minimum allowable of 0·5in., the average being only 19 per cent of this figure. In fact, in no case was the figure exceeded under a load of 412lb. The slabs have a hessian base and are stated to retain all the normal properties of wood wool building slabs.

Insulated Unit Constructions Ltd., 17a Newmarket Street, Hereford. Hereford 4535.

Readers' Information Service, Ref. B. Date 22/4/59.

★

New Hotpoint Refrigerators (C)

The latest Hotpoint refrigerator, known as the Pacemaker, is fitted with rollers so that it can easily be pulled out from its recess for cleaning behind the appliance. Two models are produced, the D.36 (illustrated) and the D.50, with respective capacities of 3·6 and 5·0 cu ft. Special features include a large freezer which will keep ice cream for a week; inner door panel with egg rack, butter compartment with glass dish and bottle rack; ice-blue non-chip polystyrene interior; and folding shelf for extra bottle room. The cabinet outer shell is made of sheet metal and is bonderized for rust resistance. The temperature inside the food storage compartment is controlled by thermostat and the compartment is insulated from the cabinet by glass fibre. A complete seal is provided by a stain resistant balloon-type door gasket. The refrigerating system is of the hermetically sealed type, comprising a motor compressor, a wire type condenser and a freezer. It is quiet running and will not interfere with radio or television. Dimensions: Internal—D.36—24½in high by 16½in wide by 21in deep; D.50 28½in high by 19½in wide by 16½in deep. External—D.36—36in high by 21in wide by 21in deep; D.50—36in high by 24½in wide by 24in deep.

C

Shelf area: D.36—6·9 sq ft; D.50—9·9 sq ft. Number of shelves: D.36—3 (plus 3 in door); D.50—4 (plus 2 in door). Shelves are of rigid steel wire finished in ice-blue plastic enamel (the D.50 has one plate glass shelf). Unit: $\frac{1}{10}$h.p. compressor unit. Temperature control: 9 position thermostat control with on/off switch. Insulation: 2in Fibreglass. Stoved enamel finishes: cabinet—white or cream; table top—grenadier red, willow green, Dresden blue, classic white and honey cream. The refrigerators are available for A.C. circuits only: 100/110, 200/210, 220/250V, 50 cycle supplies, and both models comply with B.S.S. 922 and 1691. Prices (including purchase tax): D.36—63gn (with table top) and 60gn (without table top); D.50—75gn (with table top) and 72gn (without table top).

A.E.I.—Hotpoint Ltd., 33 Grosvenor Place, London, S.W.1. Belgrave 7011.

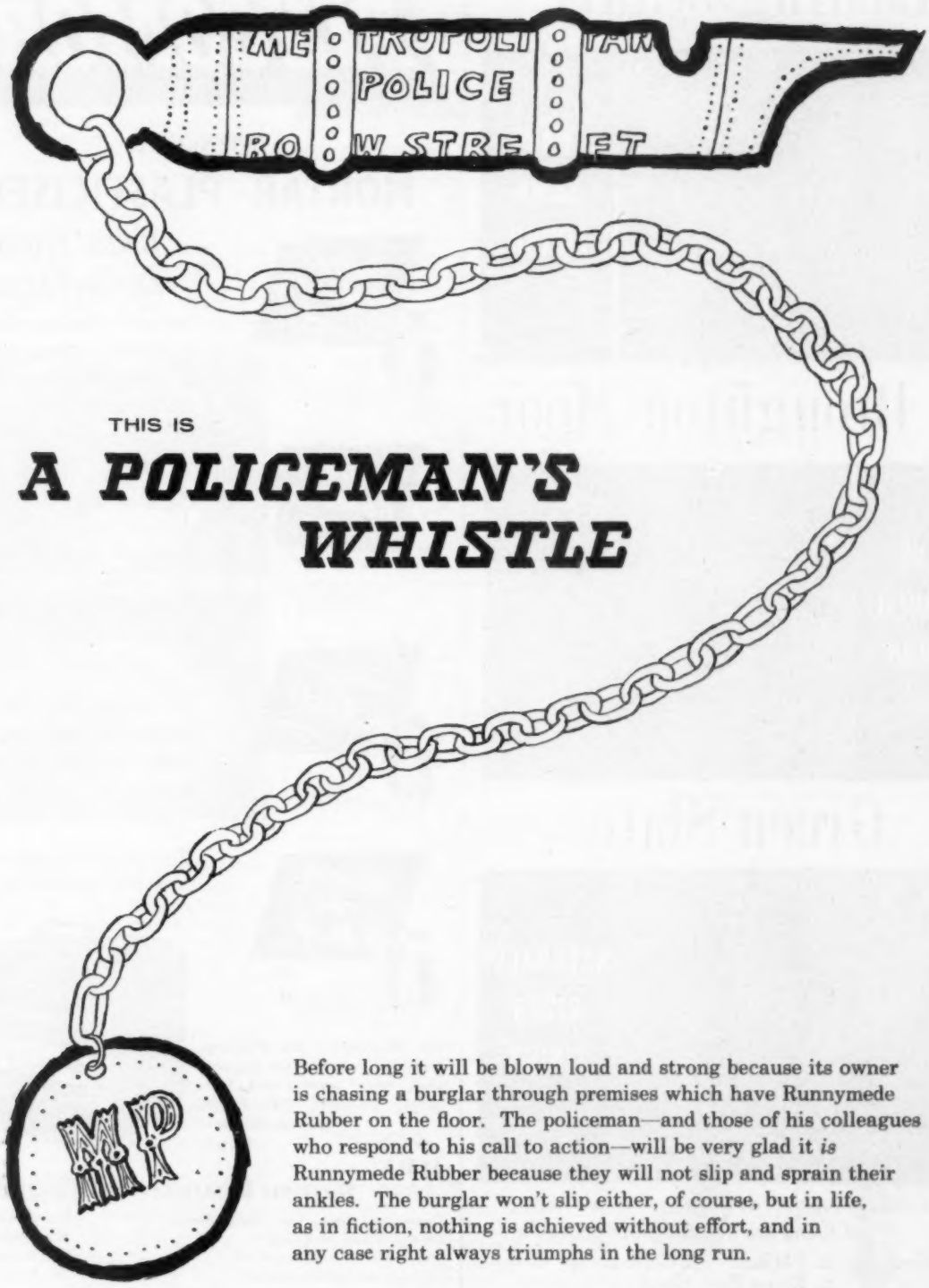
Readers' Information Service, Ref. C. Date 22/4/59.

★

New Steel Furniture (D)

This manufacturer's new Slimline range of steel furniture includes desks formed from five basic units with differing drawer and pedestal arrangements. They provide a comprehensive series of individual and modular desks for executive, secretarial and general office use. Matching Credenza units are obtainable and comprise pedestal cupboards with adjustable shelves, and bookcases with sliding glass doors. Flexibility of arrangement is provided for by virtue of the fact that cupboard and bookcase units are interchangeable. The square-edged desk tops are available in multiples of 1ft from 4ft to 8ft long by 2ft 6in deep with side tables and Credenza units 1ft 6in deep. The shape of the tops allows the desks to be used for back-to-back and end-to-end modular layout, with flush alignment. The top itself is strongly reinforced and located by a patented variable fixing device which permits instantaneous adjustment and over-

D



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Before long it will be blown loud and strong because its owner is chasing a burglar through premises which have Runnymede Rubber on the floor. The policeman—and those of his colleagues who respond to his call to action—will be very glad it *is* Runnymede Rubber because they will not slip and sprain their ankles. The burglar won't slip either, of course, but in life, as in fiction, nothing is achieved without effort, and in any case right always triumphs in the long run.

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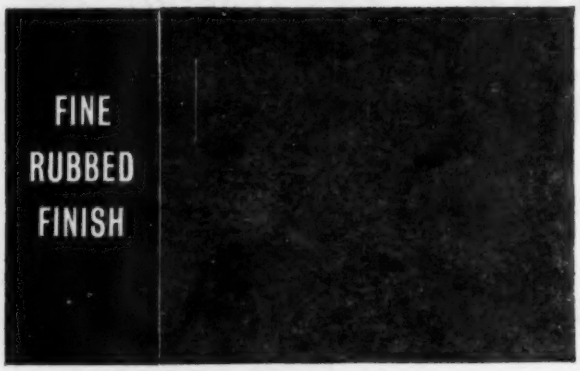
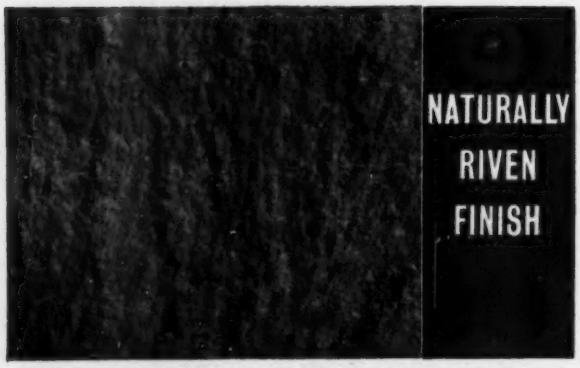
Lasting beauty

in Broughton Moor



Green Slate



Technical pamphlets showing typical methods of fixing are available on application:
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In three distinct colours : Light Sea Green, Olive Green and Pale Green Barred

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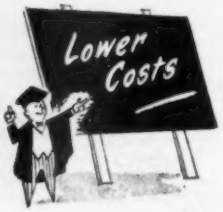
Plycomor mixes hold water against the suction of absorbent surfaces, improving adhesion, decreasing shrinkage and reducing the risk of cracking.



The elimination of lime reduces efflorescence, and lowers handling and transport costs.

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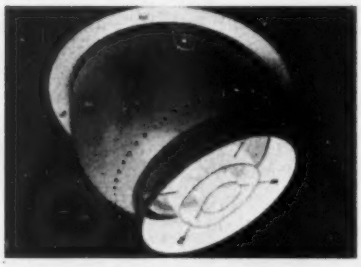
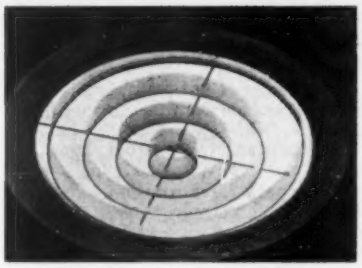
NEW PRODUCTS (continued)

hang at either or both ends. The pedestals are of welded one-piece construction, with touch action sliding reference shelf and filing drawers running on progressive ball-bearing roller suspension. They accommodate foolscap or quarto suspended filing. The box drawers have smooth-running nylon-insulated channel slides, with provision for dividers and other accessories. The knee space drawer has a full-width tray for pencils, etc., and has a six-lever mastered lock which controls automatic locking of pedestal drawers. If preferred, or when the knee space drawer is omitted, pedestals can be supplied





F

with independent locking. Mist green, dove grey and desert sand are included in the new colour range and, to achieve two-tone effects, combinations of these colours are available for pedestals and drawers. Linoleum tops are in grey, green or black with an extruded anodized aluminium strip with vinyl edging around the top. This edging is supplied in mist green, dove grey, desert sand, medium grey, office green and black. Unit prices range from £16 for tables to £40 for executive desks. The total price of all the steel office furniture shown in our illustration is £104 10s (plus purchase tax).

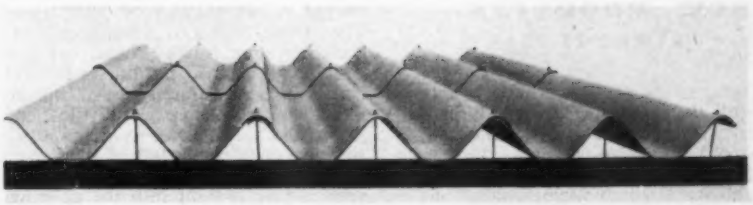
Sankey-Sheldon Ltd., 46 Cannon Street, London, E.C.4. City 4477.

Readers' Information Service, Ref. D. Date 22/4/59.

★

New Asbestos Cement Sheets (E)

A new design, capable of spanning purlins at up to 9ft 6in centres, has been added to the Universal range of asbestos cement roof sheets. The



E

Universal Magnum, as the new product is called, is a robust, deep-sectioned sheet which forms a stiff beam. It is stated to be particularly suitable for use with low pitched frameworks of the more massive type where it is sometimes desirable to arrange large section beam members at relatively wide centres. Sheets are moulded in ⅛in thick material and the 9ft 6in purlin spacing is achieved by means of a 7in overall depth of corrugation. The spacing of corrugations is 18in which gives three corrugations in an overall sheet width of 3ft 4in, with a net cover of 3ft. The 4in side laps are deep and well weathered. The end lap is a minimum of 6in, with the use of a new rotproof butyl jointing strip, known as Foamjoint, which is claimed to seal the joint completely. Lengths of sheets range from 4ft to 10ft by 6in increments. Minimum pitch of roofs is 4 deg. Moulded underlining sheets will be available to provide double skin insulated cladding, similar to existing Universal sandwich constructions. Roof lighting can be provided by means of Unilux translucent sheets which can also be obtained in the Magnum profile. Weight: approximately 47·25lb per sq yd, including normal fixings. Price: 12s 3d per sq yd.

The Universal Asbestos Manufacturing Co. Ltd., Tolpits, Watford, Herts. Watford 34551.

Readers' Information Service, Ref. E. Date 22/4/59.

★

New Lighting Fittings (F)

Three new lighting fittings have recently been added to this manufacturer's range. The first of these (bottom illustration) is the Gloucester, cat. no. 50898, a recessed louvred spotlight, large enough to take a 300W lamp. This fitting has a diameter of 14¼in and needs 12in headroom. It is designed for use with a new clip-on parabolic anodized aluminium reflector (cat. no. 50808) which is made to fit a 300W lamp. The second new fitting is the Kendal (top illustration)—cat. no. 51279—a recessed eyeball swivelling spotlight capable of being tilted to within 30 deg of the horizontal. It is designed to take a Philips hard-glass 150W reflector lamp, and can also be used with a 100 or 75W reflector lamp or with a normal 150W reflector lamp if the louvre is omitted. A feature of this fitting is that only 2¼in headroom is needed. The third newcomer is the Surrey—cat. no. 28208—twin lamp fluorescent fitting which is suitable for use either as a pendant or for direct ceiling mounting. It has a plain opal Perspex diffuser with black Perspex ends.

Harris & Sheldon (Electrical) Ltd., Ryder Street, Birmingham, 4. Central 6272.

Readers' Information Service, Ref. F. Date 22/4/59.

★

New Shower (G)

The Neptune shower is the latest addition to this firm's range of sanitary appliances. It is stated to be effective when passing approximately one gallon of water per minute and at this rate of flow the loss due to friction within the shower head is 3ft. The shower face is of nylon and has a diameter of 1½in. It can easily be disengaged from the shower head (but not removed) for self-cleansing. The shower has a swivel action which permits it to be directed to the desired positions within a wide field. The inlet is tapped ½in B.S.P. thread.

Shanks & Co. Ltd., Tubal Works, Barrhead, nr. Glasgow. Barrhead 1061.

Readers' Information Service, Ref. G. Date 22/4/59.

★

Decorated Asbestos Cement Sheets

Turnall Granitone decorated sheets are specially prepared compressed asbestos cement flat sheets to which a decorative surface treatment is applied to give an attractively finished, durable surface of appreciable thickness. It is claimed that the base sheet is exceptionally strong and the decorative surface, which has been

G

NEW PRODUCTS (continued)

designed to withstand hard wear and wide variations in temperature, will not laminate, crack or splinter. It is stated that the material has been successfully tested for refrigerator and cold room linings down to a temperature of −40 deg F. Other suitable applications for the new product would appear to be as infilling panels for curtain walling, internal partitions, shopfronts and fascias, bathroom and kitchen linings and bath panels. The sheets are supplied in a standard size of 8ft by 4ft and in ¼in and ⅜in thicknesses. Colour combinations available are grey/black mottle, combinations of white with either green, red, black, yellow and blue, and combinations of black with either white, green or red.

Turners Asbestos Cement Co. Ltd., Trafford Park, Manchester, 17. Trafford Park 2181.

Readers' Information Service, Ref. H. Date 22/4/59.

J

New Jones Crane (I)

The latest addition to the Jones range of mobile cranes is the KL12-20M. This machine has a capacity of 20 tons on outriggers or 12 tons free on wheels at 10ft radius. The standard power unit is a Perkins "Four 270D" diesel engine developing 62·5 B.H.P. It is fitted with a four-speed gearbox from which power is transmitted through a multi-strand chain drive, running on ball bearings in a totally enclosed oil-bath gearcase, to the various crane motions. The standard jib is of tubular steel, straight lattice construction, 30ft in length, of two sections. It can be extended to 50ft, 70ft or 90ft as required, whilst other lengths of jib and special types, such as swan neck and fly jibs, can be supplied if necessary. The chassis is mounted on 14·00in by 24in heavy duty pneumatic tyres fitted in restrictor wheels. Two-wheel drive is the standard arrangement, but four-wheel drive can be supplied. It is claimed that the brakes, hydraulically operated with air pressure assistance, are capable of holding the machine on a 1 in 5 gradient. There is in addition a hand lever, with mechanical linkage, provided for parking purposes and steering is hydraulically controlled. A special gear is fitted which enables the outriggers to be wound in and out in very quick time. The front axle is articulated for travelling over rough ground but can easily be locked in position. Travelling speeds maximum are 8 m.p.h. unloaded and 2 m.p.h. fully loaded. The crane is full circle slewing and, if working on a single fall of rope, will lift 3½ ton loads at 120ft/min. A special gear is built into the hoisting unit which enables a load to be lowered under control of the engine, to a maximum speed of 45ft per minute with full load. The jib can be derricked from maximum to minimum radius in about 50 sec. The weatherproof driver's cabin has good all-round visibility and can be provided with heating or ventilating equipment. At maximum radius of 30ft, the crane will lift 4 tons on outriggers and 2½ tons free on wheels. Dimensions overall: 18ft 9in long (without jib) by 10ft wide by 12ft 6in high (jib-lowered). Tail radius: 9ft 6in. Weight: 26 ton approx. with 30ft jib. The KL12-20 can also be supplied either lorry mounted or as a railway model designed for 4ft 8½in gauge.

K. & L. Steelfounders & Engineers Ltd., Letchworth, Herts.

Readers' Information Service, Ref. I. Date 22/4/59.

★

New Safety Belts (J)

This company has introduced a new range of safety belts and harness known as the Pakawa. This equipment comprises a choice of three basic waistbelts known as Wiry, Gripper and Surelock. The first of these is made from flax webbing with the eyelets protected by internal wire cords set in leather liners. The second is a new pattern of endless nylon web belt which is claimed to give comfort and security simply by pulling the webbing tight either side of a two-way buckle. The third is an all-weather-poof Terylene web belt with PVC coating and single action snap-to locking safety buckle. Several anchoring attachments, straps, ropes and lines are available for making bosun's chairs and lifting appliances or for converting any of these waistbelts to the needs of linesmen, spidermen, window cleaners, quarrymen or builders. All the equipment is stated to comply with B.S.S. B.97/1956 requirements. Illustration is of a single purpose Gripper belt with nylon rope and safety hook permanently attached.

Barrow Hepburn & Gale Ltd., P.O. Box No. 413, Grange Mills, London, S.E.1. Bermondsey 4525.

Readers' Information Service, Ref. J. Date 22/4/59.

★

New Photoprinter (K)

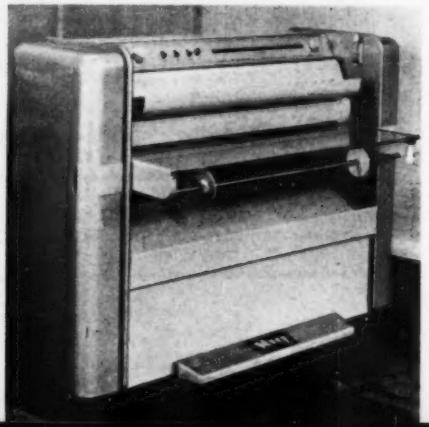
The new NIG Zephyr photoprinter has been designed for the high speed reproduction of engineering drawings and is claimed to be capable of printing 2,500 different ones in a day.

I

It is a semi-automatic combination printing and ammonia developing machine which operates at all speeds from zero up to 40ft/min, with an effective working width of 42in, although 44/45in tracings can be accommodated. The printing section comprises a 6in diameter ground glass cylinder, with foot pedal release-of-band tension. Illumination is by means of a 3kW heavy duty quartz lamp, operated through a constant wattage transformer. Speed is accurately controlled by a magnetic amplifier which operates at all speeds. Developing is carried out on the wind tunnel principle by which ammonia is blown directly and at high speed onto the entire surface of the print. Sensitized papers in rolls are fed to the machine from under a glass feed table whilst delivery of the finished prints can be from either the back or front of the machine. The Zephyr can be supplied for operation on 220V., 60 cycles, single phase, A.C. supply. Overall dimensions: 62in by 34½in by 51 in high. Weight: 11cwt. Price: £850.

NIG Manufacturing Co. Ltd., 3-9 Dane Street, Holborn, London, W.C.1. Chancery 8742.

Readers' Information Service, Ref. K. Date 22/4/59.



K

Architects: T. P. Bennett & Son. Contractors: Taylor Woodrow Construction Ltd.

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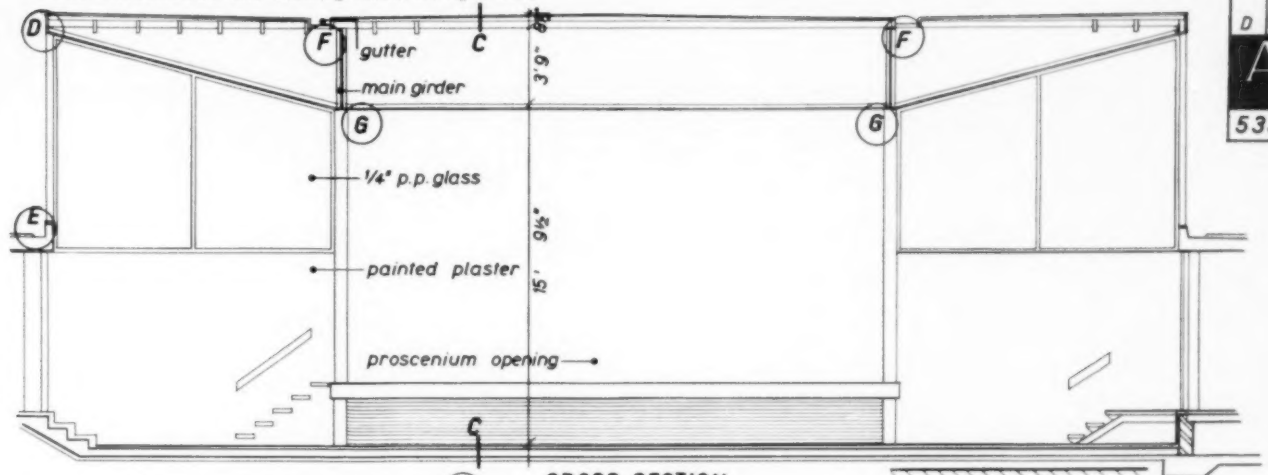
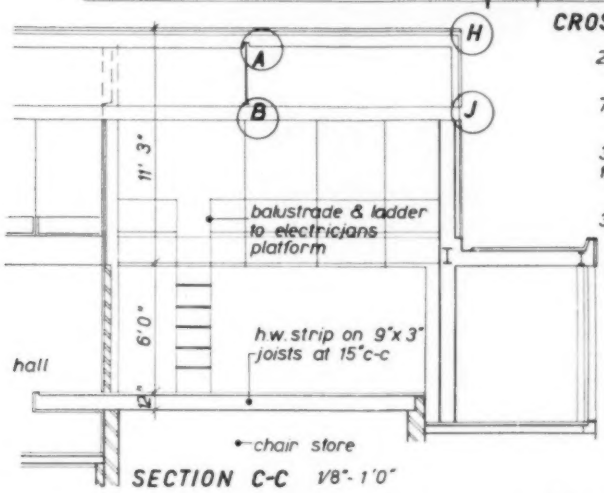
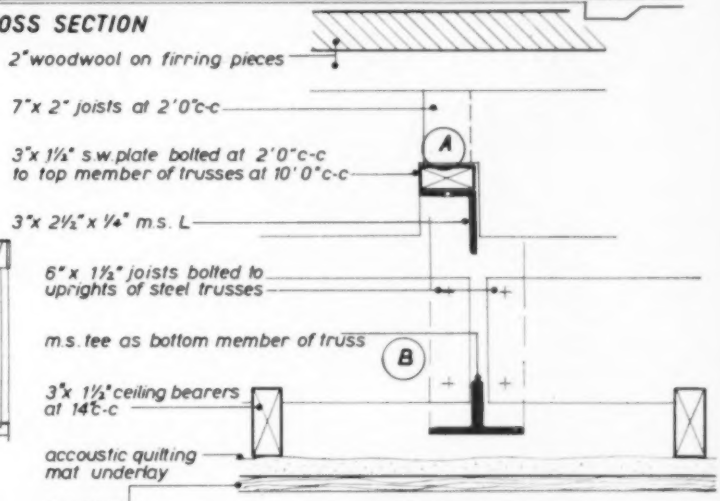
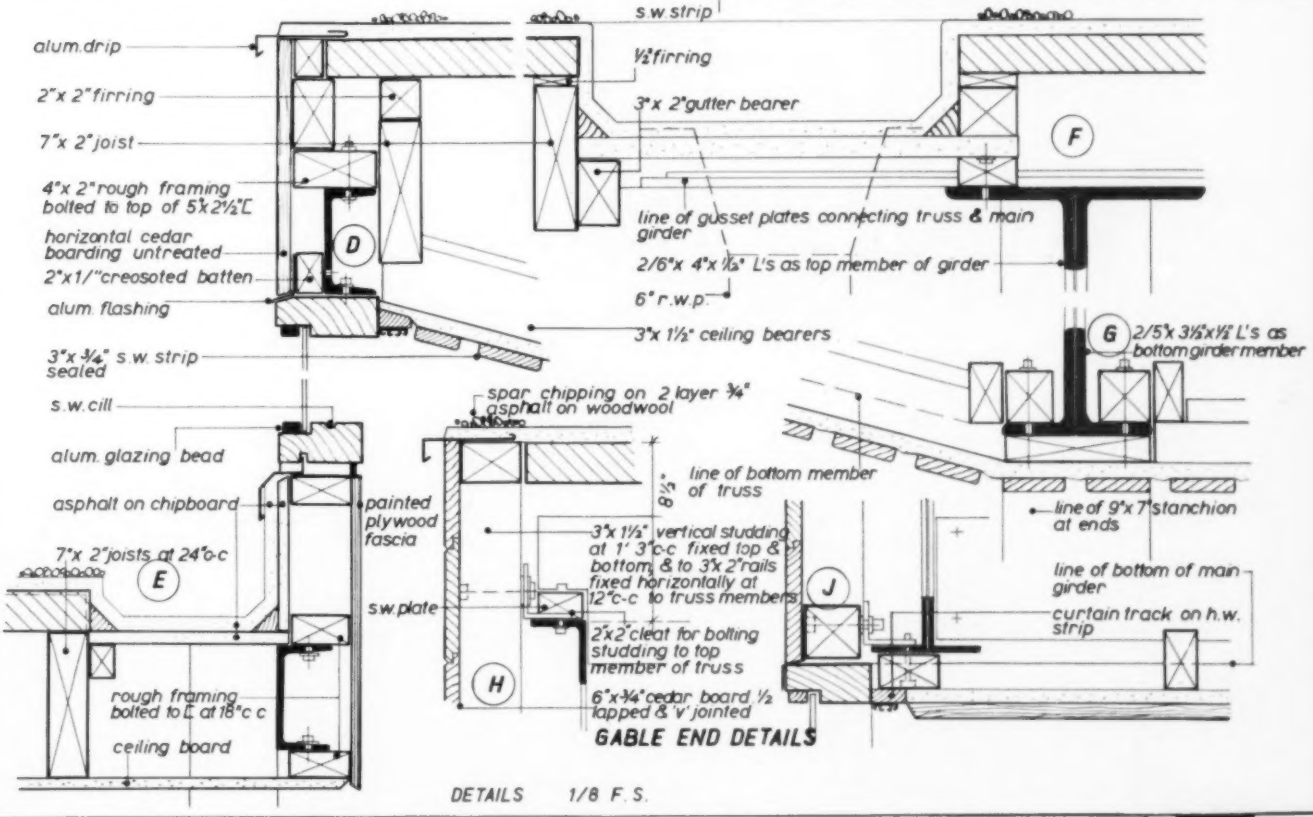


CROSS SECTION



SECTION C-C 1/8"-1'0"

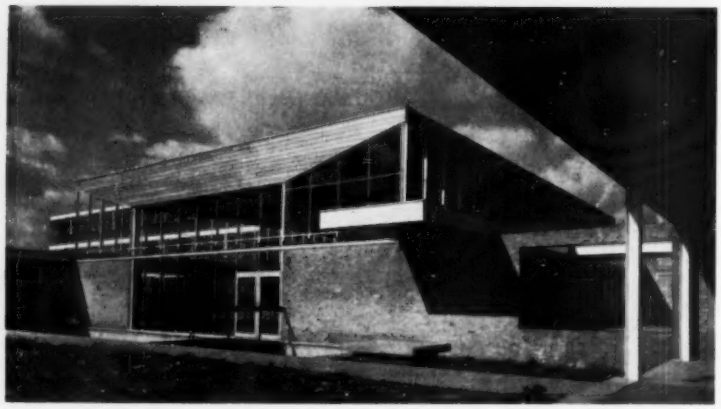

2" woodwool on firring pieces
7"x 2" joists at 2'0"c-c
3"x 1½" s.w. plate bolted at 2'0"c-c to top member of trusses at 10'0"c-c
A
3"x 2½"x ¼" m.s. L
6"x 1½" joists bolted to uprights of steel trusses
m.s. tee as bottom member of truss
B
3"x 1½" ceiling bearers at 14"c-c
accoustic quilting mat underlay


alum. drip
2"x 2" firring
7"x 2" joist
4"x 2" rough framing bolted to top of 5"x 2½"L
horizontal cedar boarding untreated
2"x 1/" creosoted batten
D
alum. flashing
3"x ¾" s.w. strip sealed
s.w. cill
alum. glazing bead
asphalt on chipboard
7"x 2" joists at 24"c-c
E
rough framing bolted to L at 18"c.c
ceiling board
painted plywood fascia
s.w. plate
s.w. strip
½" firring
3"x 2" gutter bearer
F
line of gusset plates connecting truss & main girder
2/6"x 4"x ½" L's as top member of girder
6" r.w.p.
3"x 1½" ceiling bearers
G
2/5"x 3½"x ½" L's as bottom girder member
spar chipping on 2 layer ¾" asphalt on woodwool
line of bottom member of truss
line of 9"x 7" stanchion at ends
3"x 1½" vertical studding at 1' 3"c-c fixed top & bottom & to 3"x 2" rails fixed horizontally at 12"c-c to truss members
J
line of bottom of main girder
curtain track on h.w. strip
2"x 2" cleat for bolting studding to top member of truss
H
6"x ¾" cedar board ½ lapped & 'v' jointed

GABLE END DETAILS

DETAILS 1/8 F.S.

ROOF DETAILS. ASSEMBLY HALL. GIRLS SCHOOL. CHATHAM RICHARD SHEPPARD, ROBSON & PARTNERS



The ceiling finish of this assembly hall of the Warderslade Secondary School for Girls at Chatham consists of soft-wood slats fixed to bearers through an acoustic quilt. The fascia, externally, is horizontal boarding in cedar which has been left natural. The stage front is in white sand lime bricks with a polished hardwood facing to the edge of the floor slab. The proscenium walls are dark olive green and the box columns, white. The architects are Richard Sheppard, Robson and Partners

CONTRACT • NEWS •

Notes below give basic data of contracts open under locality and authority which are in a bold type. References indicate: (a) type of work (b) address for application. Where no town is stated in the address it is the same as the locality given in the heading (c) deposit (d) last date of application (e) last date and time for submission of tenders. Full details of contracts marked • are given in the advertisement section.

OPEN

BUILDING

ANTRIM C.C. (a) Additions and alterations at Ballymacash Primary School, Lisburn. (b) Education Office, 475 Antrim Road, Belfast. (c) £5. (e) May 15.

• • •

ASHBY DE LA ZOUCH R.C. (a) 12 houses and four bungalows, Measham Road, Appleby Magna. (b) Mr. C. S. Curtis, Surveyor, Council Offices, South Street, Ashby de la Zouch, Leics. (c) 2gn. (e) May 4.

• • •

ASHTON-IN-MAKERFIELD. (a) First phase of new infants' and junior school, Rectory Road, for School Managers of Ashton-in-Makerfield C.E. School. (b) Gornall, Kelly & Partners, architects, 155 The Albany, Old Hall Street, Liverpool, 3.

• • •

AYLESBURY B.C. (a) Construction of a pumping station, Gatehouse Road industrial site. (b) Borough Engineer and Surveyor, "Friarscroft", 3 Oxford Road, Aylesbury. (c) 2gn. (e) May 11.

• • •

AYR. (a) Separate trades for proposed out-patients' department, Heathfield Hospital, for Board of Management. (b) Secretary and Treasurer, Board of Management for Southern Ayrshire Hospitals, 2 Barns Park, Ayr. Applications are also invited from contractors who are prepared to quote on a several works basis.

• • •

BARNSLEY B.C. (a) Contract S.H.2. Erection of 86 houses at St. Helen's estate. (b) Borough Engineer, Town Hall, Barnsley. (c) 2gn. (e) May 25.

• • •

BARNSLEY B.C. (a) Erection and completion of a crematorium and ancillary buildings at Ardsley. (b) Borough Engineer, Town Hall, Barnsley. (c) 2gn. (e) May 13.

• • •

BATTLE R.C. (a) Fixed price for alterations and additions to treasurer's offices. (b) Council's Surveyor, The Watch Oak, Battle, Sussex. (c) 2gn. (e) May 4.

• • •

BIRMINGHAM C.C. (a) 15 dwellings and 26 garages, Bartley Green estate. (c) 2gn. (e) May 22.

• • •

BUSHEY U.C. (a) 16 flats and 24 houses, Little Bushey estate. (b) Engineer and Surveyor, Council Offices, Rudolph Road, Bushey, Herts. (c) 3gn (cheques payable to Council). (e) May 5.

• • •

CHESTER C.C. (a) 42 houses, four flats, Melrose Avenue, Great Boughton. (b) Council's Architect, T. C. R. Eaton, 16 White Friars, Chester. (c) 3gn. (e) April 28.

• • •

CHESTERFIELD R.C. (a) 22 houses at Arnold Avenue, Gleadless. (b) Engineer and Surveyor, Rural Council House, Saltergate, Chesterfield. (c) 2gn. (e) May 6.

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CHRISTCHURCH B.C. (a) Four houses on a fixed price basis. (b) Messrs. Geen & Cross, Metropole Chambers, The Lansdowne, Bournemouth. (c) 2gn (payable to Council). (e) April 28.

* * *

CLARE (SUFFOLK) R.C. (a) Dwellings and site works in five parishes. Clare, nine houses, seven bungalows; Ousden, two houses; Hundon, four houses; Kedington, four houses; Withersfield, three bungalows. (b) Engineer and Surveyor, Stonehall, Clare, Suffolk. (c) 2gn. (e) May 2.

* * *

CO. DOWN E.C. (a) Primary school at Maralin, Lurgan. (b) Ferris, Craig & Moore, quantity surveyors, 41 University Road, Belfast. (c) 5gn. (e) April 30.

* * *

COOKSTOWN, CO. TYRONE. (a) Demolition of existing church and erection of a hall and vestry at Molesworth Presbyterian Church. (b) S. R. Bolton, secretary to building committee, 35 Oldtown Street, Cookstown. (c) 5gn. (e) April 30.

* * *

CROMPTON (LANCS) U.C. (a) 36 aged persons' bungalows of traditional construction on Hunger Hill estate. (b) Engineer and Surveyor, Town Hall, Shaw. (c) £2. (e) May 1.

* * *

CUCKFIELD R.C. Contract No. 138. (a) 22 dwellings at Grange Road, Crawley Down. (b) Engineer and Surveyor, Council Offices, Boltro Road, Haywards Heath, Sussex. (c) 2gn. (e) April 27.

* * *

DARTFORD B.C. (a) 48 flats, 17 garages, Temple Hill Neighbourhood Unit. (b) Thomas Armstrong, Town Clerk. (c) 2gn. (e) May 11.

* * *

DARTFORD B.C. (a) 43 flats and maisonnettes and nine garages, Temple Hill Neighbourhood Unit. (b) Thomas Armstrong, Town Clerk. (c) 2gn. (e) May 11.

* * *

DARTFORD B.C. (a) 10 houses, Temple Hill Neighbourhood Unit. (b) Thomas Armstrong, Town Clerk. (c) 2gn. (e) May 11.

* * *

EASTBOURNE B.C. (a) Langley Village housing estate, section 18, 24 houses, Leslie Street, 56 flats, each consisting of four identical blocks. (b) Borough Surveyor, 2-4 Saffrons Road, Eastbourne. (d) April 30. (c) 2gn. (e) June 10.

* * *

EASTLEIGH B.C. (a) 22 dwellings at Velmore housing estate. (b) E. J. Tapley, Borough Engineer and Surveyor. (c) 2gn. (e) May 25.

* * *

EASTLEIGH B.C. (a) 12 pairs of one-bedroom, old people's bungalows, together with paths, fences and various ancillary works at Velmore housing estate, Stage V. (b) Borough Engineer, Town Hall, Eastleigh. (c) 2gn. (e) May 25.

* * *

EIRE—DUBLIN. (a) Erection of a nine-storey block of flats, Dominick Street Housing Area, Section No. 1.B., containing 35 flat dwellings. (b) City Treasurer, Exchange Buildings, Lord Edward Street, Dublin. (c) 15gn. (e) April 28.

* * *

EIRE—TIPPERARY. (a) Erection of a new parish church at Tipperary, for Rev. Father O'Dwyer, C.C. (b) Chevalier Patrick J. Sheahan, Architect, 47 O'Connell Street, Limerick. (c) 10gn. (e) May 12.

* * *

EIRE—TRALEE. (a) Extensions and alterations at Moyderwell Convent National School, Tralee, Co. Kerry. (b) Austin F. Reddy, 22 Upper Pembroke Street, Dublin. (c) £10. (e) May 11.

* * *

FAVERSHAM B.C. (a) Contract 5K, 36 houses, Lower Road estate. (b) Borough Surveyor, Municipal Offices, Faversham, Kent. (c) 2gn. (e) May 4.

* * *

GT. HARWOOD U.C. (a) Eight single-person's bungalows at Park Road. (b) Messrs. Grimshaw & Townsend, Willow Street, Accrington. (c) 2gn. (e) April 30.

* * *

GUILDFORD R.C. (a) 31 dwellings and ancillary works, Meadowlands, West Clandon. (b) J. W. Snape, engineer and surveyor, Millmead House, Guildford. (c) 2gn. (e) May 13.

* * *

HAMBLEDON R.C. (a) 17 dwellings at Chapel End, Milford. (b) Engineer and Surveyor. (c) 3gn. (e) May 11.

* * *

HEREFORD C.C. (a) 156 dwellings and 68 garages, Green Lane, section 3. (b) Norman Roberts, architect (Housing), Town Hall. (c) 2gn. (e) May 11.

* * *

ISLE OF WIGHT STANDING JOINT COMMITTEE. (a) Fixed price tenders for the erection of a pair of police houses at Love Lane, Cowes, Isle of Wight. (b) County Architect, County Hall, Newport, Isle of Wight. (c) 2gn (payable to Council). (d) April 13. (e) May 6.

* * *

LIMAVADY, CO. LONDONDERRY. (a) Erection of a voluntary primary school (girls) at Termoncanice, Limavady, for the Rev. A. O'Doherty. (b) M. A. Fitzpatrick, architect, Strand Chambers, 16-18 Strand Road, Londonderry; or P. J. Davidson, 16 High Street, Belfast, quantity surveyor. (c) 7gn. (e) May 25.

* * *

LUTON B.C. (a) Fixed-price tenders for erection of a permanent classroom extension, Stopsley Junior School. (b) Borough Architect. (e) April 30.

* * *

NORTHERN IRELAND—BELFAST C.C. (a) College of Technology extensions at Millfield. (b) Education Architect's Department, 40 Academy Street, Belfast. (c) 5gn, cheques payable to the Belfast Corporation. (e) May 20.

* * *

NORTHERN IRELAND—LONDONDERRY. (e) Erection of a school for 800 pupils at Creggan, for Most Rev. N. Farren, Lord Bishop of Londonderry —main contract, piling and structural steelwork. (b) F. N. Corr and W. H. D. McCormick, 7 Ferryquay Street, Londonderry. (c) £26 5s. (e) May 5.

* * *

N.I. MINISTRY OF FINANCE. (a) Concrete piling at Crown Office Building, Queen Elizabeth Road, Enniskillen, Fermanagh. (b) Room 103, Law Courts Building, Belfast.

* * *

NORTH RIDING C.C. (a) Extensive alterations and adaptations to Upsall Hall, near Nunthorpe, Middlesbrough, to provide an industrial occupation centre. (b) County Architect, Northallerton. (c) 2gn. (e) May 6.

PENGE U.C. (a) Block of 14 maisonnettes. (b) Engineer and Surveyor, Town Hall, Anerley Road, S.E.20. (c) 5gn. (e) April 28.

* * *

PLOUGHLEY R.C. (a) Fixed-price tenders for one pair of bungalows at Hethe, near Biscester and one pair at Fringford. (b) Engineer and Surveyor, Waverley House, Bicester. (c) £2. (e) May 1.

* * *

RHYMNEY U.C. (a) Fixed price tenders for the erection of 86 dwellings at Ty Coch (No. 3) housing site. (b) Council's Architect, W. T. Bebb, Esq., Manor House, Bank Square, Chepstow (c) 3gn. (e) April 30.

* * *

RINGWOOD AND FORDINGBRIDGE R.C. (a) Six houses at Thorneyhill, Bransgore, nr. Christchurch. (b) The Homeville Co. Ltd., 12 Craufurd Rise, Maidenhead, Berkshire. (c) 2gn. (e) April 30.

* * *

ST. ALBANS C.C. (a) Demolition of 7, 9 and 11 Cross Street, and 25, 27, 29 and 31 Spencer Street, and erection of one shop and five flats. (b) City Engineer and Surveyor. (e) May 20.

* * *

ST. NEOTS U.C. (a) Contract 1: six houses with outbuildings; Contract 2: six houses with outbuildings. (b) Surveyor, Council House, Huntingdon Street, St. Neots. (e) May 1.

* * *

SCOTLAND—BERWICKSHIRE C.C. (a) Several trades for erection of new junior secondary school at Earlston. (b) County Clerk, County Buildings, Duns. (d) April 27, to be considered for inclusion in panel of competing contractors.

* * *

SCOTLAND—GLASGOW C.C. (a) Several works for 12 houses at Yetholm Street. (b) Architectural and Planning Department, 20 Trongate, Glasgow, C.1. (e) April 30.

* * *

SHIPLEY U.D. (a) Fixed-price tenders for 36 one-bedroom and 18 bed-sitting room flats, with site works and drainage. (b) Surveyor, Town Hall. (c) 5gn. (e) May 1.

* * *

SHREWSBURY B.C. (a) 50 semi-detached three-bedroom houses at Harlescott Grange estate. (b) Borough Surveyor. (c) 2gn. (e) May 18.

* * *

SLEAFORD, LINCS. (a) Construction of children's swimming pool and ancillary works at East Banks. (b) Council's Surveyor, 25 Westgate. (e) May 4.

* * *

SLOUGH B.C. (a) Public conveniences, Trelawney Avenue, Langley. (b) Borough Engineer, Town Hall. (c) 2gn. (e) May 15.

* * *

SOUTHAMPTON B.C. (a) Contract B.311: 26 old people's flats and four houses, Brownhill House; Contract 333: five traditional houses, Coxford Close; Contract B.335: six blocks of four-storey traditional flats (14 flats per block); Thornhill Section 2B. (b) Borough Engineer, Civic Centre, Southampton. (d) May 6.

* * *

SOUTH-EAST DERYSHIRE R.C. (a) Erection of houses and construction of roads, sewers and services in connection with the Council's building programme during 1959-60. (b) Clerk to the Council, St. Mary's Gate, Derby.

ULSTER—BELFAST. (a) The following works in connection with the erection of covered public swimming baths at the Grove, York Road, Belfast. (1) Building. (b) Documents from City Surveyor's Architectural Section (Room 53), City Hall, on production of a receipt issued by the Chief Cashier (Room 29), City Hall, for a deposit. (c) 7gn. (e) May 25. (a) Supply, delivery and erection of (2) steam boiler plant; (3) water purification and filtration plant, pipework and ancillary equipment; and (4) air conditioning plant. (b) Documents from office of constructing engineers, Messrs. McCandless & Barton, 6 Murray Street, on production of a receipt by the Chief Cashier (Room 29), City Hall, for deposit. (c) 7gn for each item. (e) May 25.

* * *

ULSTER—COOKSTOWN. (a) Demolition of church hall, and erection of McKinney Memorial Hall and Vestry for Molesworth Presbyterian Church. (b) S. R. Bolton, Secretary of Building Committee, 35 Oldtown Street, Cookstown, Co. Tyrone. (c) 5gn. (e) April 30.

* * *

ULSTER—DERRY. (a) Erection and completion of New Voluntary Intermediate School for 800 boys at Creggan, Derry, for Most Rev. N. Farren, D.D.D.C.L., Lord Bishop of Derry. Separate tenders. (1) Main contract. (2) Piling. (3) Structural steelwork. (b) F. M. Corr & W. H. D. McCormick, 7 Ferryquay Street, Derry. (c) 25gn. (e) May 5.

* * *

WANDSWORTH B.C. (a) Construction of a bowls pavilion and children's games room, Streatham Vale Park. (b) J. Noel Martin, Town Clerk, Municipal Buildings, S.W.18, giving details and names of two technical and financial referees. (d) April 29.

* * *

WEST PENRITH (CORNWALL) R.C. (a) One block of four bungalows, Highlanes, Hayle, and five dwellings and a shop at Bodriggy Crescent, Hayle, all in one contract. (b) Surveyor, F. Hartley, 38 Chapel Street, Penzance. (d) April 27.

* * *

WEST RIDING STANDING JOINT COMMITTEE. (a) Formation of third court on first floor Divisional Police Headquarters and Court House, Moorgate, Rotherham. (b) Divisional Architect, Planet Road, Adwick-le-Street, near Doncaster. (d) April 24. (e) May 8.

* * *

WIVENHOE, ESSEX, U.C. (a) Fixed-price tenders for a block of 13 flatlets, Britannia Crescent, Wivenhoe. (b) Sparrow & Clater, 52 North Hill, Colchester. (c) 2gn. (d) April 27.

* * *

WOKING U.C. (a) 38 dwellings at Barnsbury Farm estate. (b) Engineer and Surveyor, Council Offices, Woking, Surrey. (c) 2gn. (d) April 18. (e) May 25.

* * *

YORK C.C. (a) Maternity and child welfare centre, Fifth Avenue. (b) City Architect, 8 St. Leonard's Place, York. (c) £2, payable to York Corporation. (e) April 27.

PLACED

Notes on contracts placed state locality and authority in bold type with (1) type of work (2) site, (3) name of contractor and address, (4) amount of tender or estimate. † denotes that work may not start pending final acceptance, or obtaining of licence, or modification of tenders, etc.

ALDERSHOT. (1) Erection of All Hallows R.C. Secondary School, for Portsmouth Roman Catholic Diocesan Trustees (Regd.). (3) George Kemp, Stroud & Co. Ltd., Elms Road, Aldershot. (4) £139,647.

* * *

ALDERSHOT B.C. (a) Construction of a crematorium. (2) Kiln Copse. (3) Goldaming Building and Construction Co. Ltd., Godalming, Surrey. (4) £31,714.

* * *

BIRMINGHAM C.C. (1) Technical school. (2) Wychbold. (3) Frank Davis (Builders) Ltd., 1 College Road, Moseley, Birmingham, 13. (4) £218,452. (1) Infants' school. (2) The Firs. (3) John Dallow & Sons Ltd., John Street, Blackheath, Birmingham. (4) £34,672. (1) Junior school. (2) Ladywood. (3) W. & J. Webb Ltd., 257 Great King Street, Hockley, Birmingham, 19. (4) £75,900, to include also Follett Osler Secondary School annexe.

* * *

CARSHALTON U.C. (a) 42 dwellings. (2) Muschamp Road. (3) Speirs Ltd., 66 Victoria Street, London, S.W.1. (4) £87,878.

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CHELTENHAM B.C. (1) 80 flats and 92 maisonnettes. (2) Coronation Square and Edinburgh Place-Brooklyn Road, respectively. (3) George Wimpey & Co. Ltd., Hammersmith Grove, London, W.6. (4) £334,675.

* * *

DOWNPATRICK, CO. DOWN. (1) Nurses' home, for Downshire Hospital Management Committee. (3) H. J. O'Boyle Ltd., Downpatrick. (4) £85,000.

* * *

DUNDEE C.C. (1) Erection of high school. (2) Kirkton. (3) Truscon Ltd., Seymour Grove, Manchester, 16. (4) £500,000 (cost).

* * *

ESSEX C.C. (1) Erection of Lee Chapel South Primary School. (2) Basildon. (3) Whyatt (Builders) Ltd., 225 Streatham High Road, London, S.W.16. (4) £84,727.

* * *

ESSEX C.C. (1) Primary school. (2) South Green, Billericay. (3) Henry Potter (William Sharp) Ltd., Fairfield Works, Fairfield Road, Chelmsford, Essex. (4) £45,962.

* * *

GATESHEAD. (1) Erection of Durham Divisional Headquarters for National Coal Board. (2) Team Valley. (3) Leslie & Co. Ltd., Peel Street, Kensington, London, W.8. (4) £400,000 (cost).

* * *

HUDDERSFIELD B.C. (1) Junior school. (2) Rawthorne. (3) J. Wimpenny & Co. Ltd., Spurn Point, Linthwaite, Huddersfield.

* * *

KENSINGTON B.C. (1) 28 flats and 20 bed-sitting room flats. (2) St. Mark's Grove. (3) Tersons Ltd., 4 Dollis Park, Finchley, N.3. (4) £73,863.

* * *

LANCASTER C.C. (1) 199 dwellings and 35 garages, and 58 dwellings and nine shops. (2) Captain's Row and Main Street. (3) George Wimpey & Co. Ltd., Hammersmith Grove, London, W.6. (4) £530,000.

* * *

NORWICH. (1) Erection of a large factory for Roneo Ltd. (2) Sprowston. (3) A. E. Symes Ltd., 236 High Street, Stratford, London, E.15. Site works begun.

* * *

READING B.C. (1) 78 dwellings. (2) Coley Park estate. (3) Howe & Bishop Ltd., Clarendon Street, Portsmouth. (4) £109,573. (1) 114 dwellings. (2) Burghfield Road estate. (3) Orchard & Peer (London) Ltd., 32 Leopold Road, London, S.W.9. (4) £171,200.

* * *

SHEFFIELD. (1) Seven-storey physics and mathematics block for the University. (2) Hounsfield Road. (3) Tersons Ltd., 4 Dollis Park, Finchley, London, N.3. (4) £550,000 (cost).

* * *

WORCESTERSHIRE C.C. (a) Extensions and alterations to Prince Henry's Grammar School. (2) Evesham. (3) W. A. Cox (Evesham) Ltd., Abbey Gate, Evesham. (4) £91,278.

* * *

WORCESTERSHIRE C.C. (1) Erection of a College of Further Education. (2) Redditch. (3) Coleman & Tyas Ltd., Victoria Road, Bidford-on-Avon, Warwickshire. (4) £185,374.

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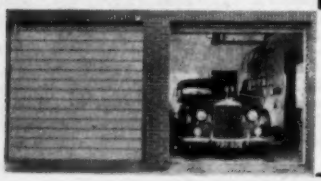

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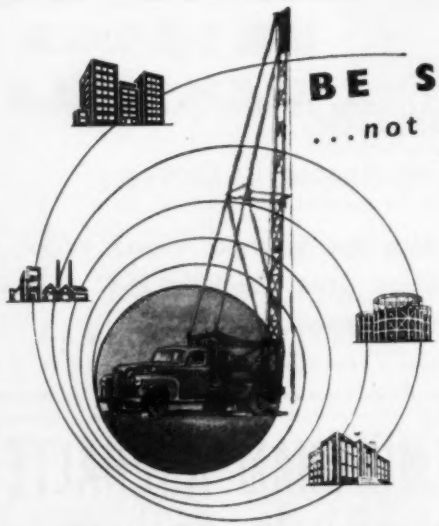

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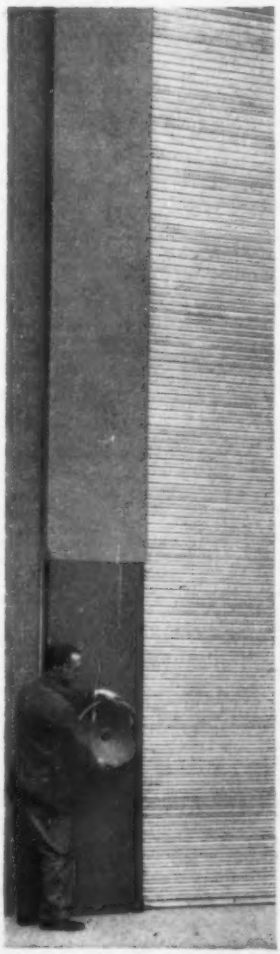

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Gloucestershire County Council Education Committee

Cheltenham College of Art, St. Margaret's Road, Cheltenham

Principal: R. S. G. Dent, R.E., A.R.C.A., R.W.A. School of Architecture, Head of School: Ian H. Abbott, Dip.Arch.(Birm.), A.R.I.B.A.

APPLICATIONS are invited for the full-time post of Studio Instructor in the School of Architecture, Pittville Pump Room, commencing on September 1, 1959. Applicants should be qualified, with a minimum of three years' office experience. Salary will be in accordance with the Burnham (Further Educational) Scale (Grade B) (£650 x £25 —£1,025), plus allowances for training, qualification and office experience, plus 5 per cent.

Forms of application may be obtained from the Principal. Closing date May 6. [5072

Welsh Regional Hospital Board

Regional Architect's Division

APPLICATIONS are invited for the post of Principal Assistant Architect on the permanent staff of the Regional Architect in accordance with Whitley Council Conditions of Service. The salary is in accordance with Scale II (£1,195 x £45(2) x £15(1) x £45(2) x £30(1)—£1,420.

Applicants must be Registered Architects and thoroughly experienced in the preparation of working and detailed drawings, specifications and supervision of works in progress. A knowledge of hospital planning and design is essential.

The successful candidate will be responsible to the Regional Architect for a major division of work, involving travelling throughout the principality. A motor mileage allowance and subsistence expenses in accordance with scale will be payable.

Applications, stating age, qualifications, experience, present and previous appointments and salary, the names of three referees, should be sent to the Secretary, Temple of Peace and Health, Cardiff, not later than April 30, 1959. [5068

Hampshire County Council
ASSISTANT HEATING ENGINEER
APT II (£725/£845)

REQUIRED for pensionable post in County Architect's Department. Candidates should have passed Section A or Joint Part I of the examination of the I.H.V.E., or hold the Higher National Certificate in Mechanical Engineering, and have experience in heating, ventilation, water, and gas services, and be designer draughtsmen. Five-day week. Canteen facilities. Assistance with removal and other expenses in approved cases.

Application forms (send s.a.e.), returnable by May 1, from the Clerk of the County Council, The Castle, Winchester. [5067

University of Edinburgh

Department of Architecture: Post-Graduate Research Unit

TECHNICIAN

APPLICATIONS are invited for the post of Specialist Technician. Duties will include the maintenance of laboratory, sample room, files of trade literature and model making. Candidates should have a thorough knowledge of at least one building trade, preferably joinery, and be acquainted with others. Salary £750. Applications should be lodged with the Secretary to the University, Old College, South Bridge, Edinburgh, 8, not later than May 23, 1959. [5066

APPOINTMENTS (cont)

Flintshire County Council

APPLICATIONS are invited for an Assistant Architect. Candidates must be Associates of the R.I.B.A. and have had substantial experience in an architect's office since passing the Final Examination and be conversant with the design of schools. Salary: Special Scale (£750/£1,030 per annum). Form of application from Clerk of County Council, County Buildings (P.O. Box No. 1), Mold. Closing date: May 11, 1959. [5087

City of Sheffield

City Architect's Department

APPLICATIONS are invited for the following appointments on the staff of the City Architect, Mr. J. L. Womersley:

(a) **Group Leader Architects,** Grade APT V (£1,175/£1,325).

(b) **Senior Assistant Architects,** Grade APT IV (£1,025/£1,175).

(c) **Assistant Architects,** Grade S.C. (£750/£1,030).

Architects with enthusiasm and determination are required to help rebuild this industrial hill city.

The above vacancies are for work in connection with large scale redevelopment schemes on which building work will commence early in 1960. There are excellent prospects of further work on interesting schemes of urban renewal.

Commencing salaries within the above grades according to qualifications and experience.

Applications from students completing full-time courses this year will be considered for posts (c).

Applications stating post applied for, age, education and training, qualifications, present and past appointments (with dates and salaries), experience and the names of two persons to whom reference may be made should reach me not later than Tuesday, May 5, 1959.

JOHN HEYS,
Town Clerk.

Town Hall,
Sheffield, 1. [5086

City and County of Newcastle upon Tyne

City Architect's Department

THE City Architect will be pleased to receive applications from suitably qualified persons for the following architectural vacancies in his department:

General and New Town Hall Section: APT V; APT IV; Special Class and APT II.

Education Section: APT V; APT IV and APT II.

Housing Section: APT IV and Special Class.

Rehousing Section: APT IV and APT II.

The salaries applicable to the above grades, which are subject to the implementation of the recent award of the National Joint Council, are at present:

APT V (£1,175/£1,325 per annum).
APT IV (£1,025/£1,175 per annum).
Special Class (£750/£1,030 per annum).
APT II (£725/£845 per annum).

The department is engaged upon an interesting and varied programme of work, including multi-storey flats, redevelopment schemes, further education projects, new town hall, and a variety of general building works.

The appointments will be subject to the provisions of the Local Government Superannuation Acts, 1937-1953, and to one month's notice on either side. Successful candidates will be required to pass a medical examination.

Application forms and full particulars may be obtained from George Kenyon, A.R.I.B.A., A.M.T.P.I., City Architect, 18 Cloth Market, Newcastle upon Tyne, 1. Applicants must state the Section and Grade applied for when requesting particulars.

Closing date for receipt of completed applications: Saturday, May 16, 1959.

John Atkinson,
Town Clerk.

Town Hall,
Newcastle upon Tyne, 1.
April 16, 1959. [5081

APPOINTMENTS (cont)

Borough of Enfield

Borough Engineer's Department

APPLICATIONS are invited for established posts within the Grades shown:

(a) **Architectural Assistant,** APT I and II (£575/£845 per annum).

(b) **Architectural Assistant (Maintenance),** APT I (£575/£725 per annum).

A London Weighting allowance of £10/£30 per annum, according to age, will be paid in addition to the above salaries. The commencing salary will be in accordance with qualifications and experience.

Saturday mornings are normally free of duty.

Application forms, returnable by May 13, 1959, to be obtained from H. Deryck Peake, M.Sc.(Eng.), M.I.C.E., Borough Engineer and Surveyor, "Percy House," 7 Little Park Gardens, Enfield, Middx.

CYRIL E. C. R. PLATTEN, LL.B.,
Town Clerk.

Public Offices,
Enfield, Middx. [5069

Borough of Leigh

APPLICATIONS are invited for the following posts in the Borough Engineer and Surveyor's Department:

(a) **Assistant Engineer.**

(b) **Assistant Architect.**

Salary for each of the above positions will be within the Special Classes Scale (£750/£1,030). Housing accommodation available if required.

The posts are subject to the N.J.C. Conditions of Service, to the provisions of the L.G. Superannuation Acts, and to medical examination.

Full particulars may be obtained on application to the Borough Engineer and Surveyor, Town Hall, Leigh.

Applications, stating age, present and previous appointments, and giving full particulars of qualifications and experience, together with the names of two persons to whom reference may be made, must reach the Borough Engineer and Surveyor, Town Hall, Leigh, not later than Saturday, May 9, 1959.

ALBERT JONES,
Town Clerk.

Town Hall,
Leigh, Lancs. [5076

TENDERS

County Borough of Brighton

FIXED Price Tenders are invited for:

Erection of three Children's Homes at Hollingdean, Lower Bevendean and South Woodingdean estates.

Bills of Quantities and Form of Tender may be obtained from the Borough Surveyor, Engineer and Planning Officer, 26-30 King's Road, Brighton, on or after Monday, April 27, 1959, on receipt of a returnable deposit of £2 2s. Drawings may be inspected upon application to the Borough Surveyor's office.

Tenders are to be delivered to the Town Clerk, in the plain sealed envelope provided, not bearing any name or mark indicating the sender, not later than noon on Monday, May 25, 1959.

W. O. DODD,
Town Clerk.

Town Hall,
Brighton. [5088

EXAMINATIONS

The Faculty of Architects and Surveyors
FORTHCOMING EXAMINATIONS

THE Faculty will be holding Professional Examinations from June 1 to 5, 1959 (inclusive), in Building and Quantity Surveying.

The examinations will be held in London and certain provincial centres. Applications from candidates for permission to sit must be received by the Secretary not later than Monday, May 4, 1959.

Information is obtainable from the Secretary, The Faculty of Architects and Surveyors, 68 Gloucester Place, London, W.1 (WELbeck 9966). [5080

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ARCHITECTURAL/BUILDING DRAUGHTSMAN experienced in housing estate and allied work and with the initiative and ability to work with minimum supervision required in expanding design office. Write giving details to: Chief Draughtsman, G. T. Crouch Ltd., Sutherland House, Surbiton Crescent, Kingston upon Thames. [5070

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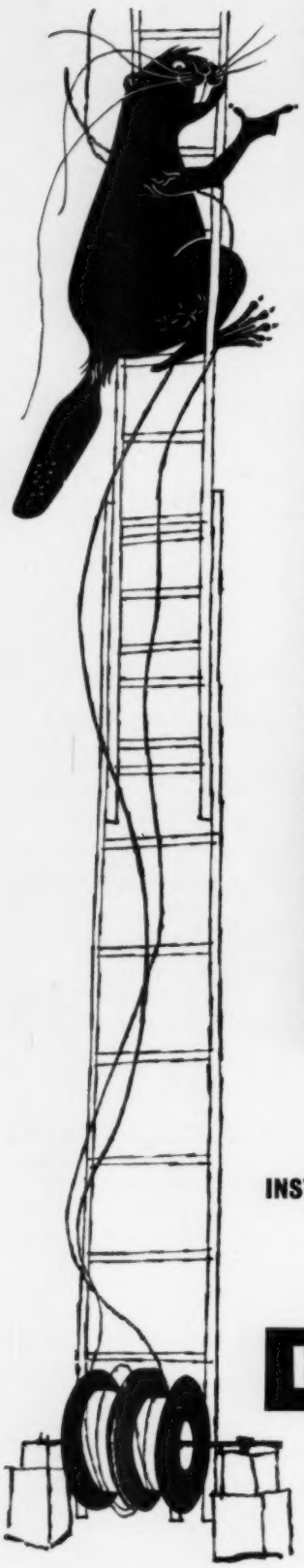

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